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# PROJECT REVIEWS OF NORTH CAROLINA REGIONAL MEDICAL PROGRAM (AN EVALUATION REPORT)

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August 1971

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# PROJECT REVIEWS OF NORTH CAROLINA REGIONAL MEDICAL PROGRAM (AN EVALUATION REPORT)

North Carolina Regional Medical Program
Prepared by Research and Evaluation Division
August 1971

## Introduction

As its title imples, the Research and Evaluation Division was considered to be the appropriate group to conduct the North Carolina Regional Medical Program evaluation activities. Staff capabilities for evaluation were developed and a two-fold task envisioned: evaluation of project achievements and of overall Program impacts.

As RMP development unfolded, both tasks proved impossible of accomplishment. Since, in the early years of the Program, and despite many sincere efforts, no overall Program goals and timetables were established, it proved impossible to gauge their degree of achievement.

Changing directives from Washington were in part to blame. Successive emphases on continuation education, manpower, cooperative arrangements, minority groups, the urban and rural poor, model cities, liaison with other Federal programs, and vacillation between health care conservatism and the need for changing the system, flared briefly, to remain rather undefined or to fade from view. Initial disease emphases also were added to until the categorical emphases of RMP became blurred, despite sporadic insistence upon their continuing relevance. Local RMP's can hardly be blamed for failure to set and maintain clear directions.

Project evaluation also presented dire problems. If it were to be done properly, rigorous design and competent project staff would be required. The former was unpalatable to project directors impatient for action. The latter would have added costs, or diverted funds, which many felt should better be

allocated to project activities rather than to their evaluation. Here too, the vacillation of Washington on the importance of evaluation had a profound local effect. Projects which ignored the contingencies of evaluation were supported nevertheless. It seemed no one really wanted, or would insist upon, evaluation.

Despite the unclarity of local goals and priorities, RMP grew to considerable dimensions. Projects related to the general nationally stated goals were supported. There was no insistence that they be linked programmatically at the local level. As the national goals shifted, so did areas of project support. Projects were accumulated over time, rather than planned. And they now are the North Carolina Regional Medical Program.

True evaluation, however loosely defined, proved impossible. RMP project activities were, however, manifold. To approach evaluation a shift of attention was essential, towards the monitoring of project activities. This is RMP history, rather than evaluation. Nevertheless, an overview of project scope and activities would, it was felt, clarify and document what the Program had become.

Accordingly, a questionnaire concerning relevant activities was developed and circulated to all Project Directors. Because of the timing of their planned reporting activities, not all projects responded to the questionnaire. Most, however, did, and their number is sufficient to reveal the general outlines of NCRMP.

The replies to this survey (and their analysis) comprise this review of projects.

# I

# RMP'S EDUCATIONAL ACTIVITIES

Several RMP projects have conducted educational programs in the hopes of updating North Carolina's health professionals' knowledge of those things which are relevant to the treatment of heart disease, stroke, cancer, and related diseases.

It is extremely difficult to assess the impact of various continuation education programs on those who have listened to lectures, attended clinics, and seen demonstrations. We would like to know not only how much knowledge these health professionals have acquired, but in what ways their practice of medicine has changed as a direct result of the knowledge imparted during these sessions. We want to know if diagnoses have become more accurate, if the referral patterns of physicians have changed, if the physician, nurse, and other health professional have planned a better future for a patient. We want to know specifically the effect of RMP'S educational efforts on the treatment of heart disease, stroke, cancer, and related diseases. However, such an assessment would have to be made over a long period of time.

Therefore, at this time we will have to make the assumption that the more continuation education given, the more that has been learned. And, the impact is probably greatest in areas where most programs have been given, on those professional groups which are the targets of and on those diseases which are the subjects of the greatest number and the most comprehensive projects. In addition to the mere listing of project activities, RMP'S educational impact will be discussed in terms of geographical distribution, the characteristics of the counties in which programs were held, and the types of personnel that were educated.

RMP Projects which have had educational components:

| | Project | Disease Focus | Target Group |
|---|---|---|---|
| 1. | A Community Program for the Early Detection and Management of Hypertension | heart disease stroke | physicians and nurses |
| 2. | A Comprehensive Stroke Program for North Carolina | stroke | stroke teams: physicians, nurses, allied health profess nals |
| 3. | Cancer Information Service | cancer | physicians |
| 4. | Continuation Education in Dentistry | multiple; dental procedures in the hospital | dentists and physicians |
| 5. | Continuing Education for Physical Therapists | multiple | physical therapists |
| 6. | Diabetes Consultation and Education Service | diabetes | physicians, nurses, other health-care personnel, diabetics and lay public |
| 7. | Education and Research in Community Medical Care | multiple | physicians and medical studen |
| 8. | Innovations in Clinic Nursing | multiple | nurses |
| 9. | Tumor Tissue Registry | cancer | physicians |

RMP Projects that were not included in this report: because project reports were not returned to the RMP'S Division of Research and Evaluation:

| | | |
|---|---|---|
| 10. | A Closed Chest Cardiopulmonary Resuscitation Program | heart |
| 11. | Continuation Education in Internal Medicine | multiple |
| 12. | Coordinated Oncology Chemotherapy | cancer |
| 13. | Coronary Care Training and Development | heart |
| 14. | Establishment of a Network of Coronary Care Units in Small Community Hospitals in Appalachia, North Carolina | heart |
| 15. | Heart Consultation and Education Programs | heart |

Table 1: Counties in Which Hypertension Teaching Seminars Were Held, Number of Active Physicians, Number and Proportion of Physicians Attending Seminars, and Average Proportion of Physicians Attending Seminars, By Type of County.

| Counties | No. active physicians | No. physicians Attending Seminars | Proportion of Physicians Attending Seminars | Average Proportion of Physicians Attending Seminars By Type of County |
|---|---|---|---|---|
| METROPOLITAN | | | | |
| Buncombe | 196 | 14 | .07 | |
| Durham | 680 | 18 | .03 | |
| Guilford | 298 | 121 | 41 | |
| Mecklenburg | 416 | 164 | 39 | 25 |
| URBAN | | | | |
| Cabarrus | 58 | 53 | 90 | |
| Catawba | 76 | 38 | 50 | |
| Edgecombe-Nash | 66 | 40 | 61 | |
| Gaston | 81 | 51 | 63 | |
| Lenoir | 45 | 16 | 36 | |
| New Hanover | 95 | 12 | 13 | |
| Pasquotank | 24 | 22 | 92 | |
| Pitt | 71 | 22 | 31 | |
| Rowan | 65 | 46 | 71 | |
| Wayne | 55 | 12 | 22 | |
| Wilson | 58 | 17 | 29 | |
| | | | | 51 |
| ADJACENT | | | | |
| Haywood | 30 | 14 | 47 | |
| | | | | 47.0 |
| SEMI-RURAL | | | | |
| Beaufort | 24 | 30* | 100+ | |
| Burke | 57 | 15 | 26 | |
| Caldwell | 34 | 20 | 59 | |
| Craven | 39 | 37 | 95 | |
| | | | | 70 |

*The number of physicians attending is larger than the number of active physicians in the county.

1. A Community Program for the Early Detection and Management of Hypertension

A. A total of 761 physicians and 50 nurses have attended the hypertension teaching seminars. Four of the counties in which the teaching seminars were held are categorized as metropolitan, twelve as urban, one as adjacent, four as semi-rural, and none as rural. Table 1 shows the counties in which teaching seminars have been held, the number of physicians active in each county, the number of physicians attending the seminars as well as the proportion of physicians in each county attending the seminars. Note that the number of physicians attending is greatest in the metropolitan counties, while the proportions of physicians attending in these same counties are relatively low. This probably is explained in part by the large number of specialists in metropolitan areas, many of whom are not primarily interested in hypertension. In addition, the large medical center is likely to offer educational programs that compete for the physician's time. Proportional attendance is highest in semi-rural areas where it is more likely, than in urban areas, that the physician is a general practitioner (see Appendix II, Table A4) and where educational opportunities are minimal.

B. The compact study plan and various references on hypertension which the project has mimeographed are used extensively by medical students, interns, residents and attending staff. The project office has a steady demand for this literature.

2. Comprehensive Stroke Program

A. Four basic training courses for the Stroke Teams have been conducted since June 1969. In-service Educational Programs were conducted in twenty-two hospital (including the personnel from eight nursing homes). The following types and number of people attended the courses.

| | M.D. | R.N. | P.H.N. | P.T. | L.P.N./ Aide/Other | Total |
|---|---|---|---|---|---|---|
| Basic Training Course (32 hours) | 22 | 52 | 31 | 15 | 17 | 137 |
| In-Service | 157 | 479 | 119 | 17 | 444 | 1,216 |
| | | | | | | 1,353 |

B. All members of the stroke teams receive the program guidelines. Physicians and nurses consult them to determine patient treatment.

C. The project lends films and film strips for continuing education.

3. Cancer Information Service

A. Nineteen Telephone Tumor Board conferences were made between Duke and New Hanover Memorial Hospital in the pilot program. Twenty of the Senior Staff and three of the House Staff (both of which are 100% of the staffs) have attended the conferences. The Duke and New Hanover physicians are enthusiastic about the conferences.

B. Bowman Gray and UNC will establish similar programs in 1971. Bowman Gray is planning to establish a Telephone Tumor Board with Mission Memorial Hospital in Asheville, while UNC may establish one with Lumberton's South Eastern General Hospital. Dr. Robert Cooper of Bowman Gray sees a real need for communication between the oncologist at the university medical center and the practitioner. He feels that a participating hospital must have a staff that is interested in the treatment of neoplastic diseases, which would require a hemotologist or oncologist. Dr. James A. Bryan, II feels that a participating hospital would have to have a House Staff, which would exclude most hospitals with less than 400 beds. (There are eight general hospitals in North Carolina, in addition to the university-related centers and to New Hanover Memorial Hospital that have approximately 350-400 beds or more.)

## 4. Continuation Education in Dentistry

### A. Continuation Education Sessions for Dentists.

Four continuation education sessions have been presented in conjunction with each of the following Dental Societies: Pitt-Beaufort, Wilson, Reidsville, Rowan County, Buncombe County, and Hendersonville. An average total of 84 dentists attended each of the sessions. (See project response in Appendix I.)

The project directors feel that the presentations have updated the dentists' knowledge and skills relating to diabetes, heart disease, cancer, renal disease, hemorrhagic disease and stroke. Many of the presentations were programmed and participants were quizzed.

Evaluation questionnaires which will be given to each participant at the conclusion of the program, will give project directors more accurate ideas of the effectiveness of the presentations.

### B. Size of Community and Success of Program.

> "Some programs have been more successful than others but only in one case has lack of success been outstanding and that seems to involve the size of the community and hospital as well as the personnel available to that hospital. The one large community selected has had the poorest attendance, percentage-wise of the six communities involved. We feel it is due in large part to the fact that dental specialists (oral surgeons) are available to this community and perform functions in the hospital that cannot be done in smaller communities due to absence of this specialist. It is felt by the general dentist in the large community that since the oral surgeon is available and can perform this function, that he need not participate in the program and is not needed--as he would be in the smaller community. For this reason we are recommending that the larger communities be excluded in future projects such as this and concentration be placed on the smaller community that must rely on the general dentist for these skills and knowledge." (Project Response)

C. Where and How Education Should be Delivered.

Delivering this type of education to dental practitioners seems to be done most effectively in the communities in which the dentists practice, rather than at a distant learning center. Responses from participants will, at a later date, indicate the best method of delivery, e.g. programmed, taped, lecture.

D. Hospital Administrators, Physicians and Dental Procedures.

"Hospital administrators and physicians have been made more aware of the necessity of dental procedures on hospitalized patients by the fact that they have accepted the program for their hospital as well as having attended several of the sessions. The administrators have assisted in arranging facilities for the program, utilizing their personnel for tours of the facilities, as well as making commitments for future dental acquisitions. One of the hospital administrators is presently in the process of acquiring dental equipment and each of the other administrators has indicated that he would be most willing to pursue this if the dentists in the community request it." (Project Response)

E. Dentists and the Local Hospital.

"Tours of the local hospital were arranged in order to acquaint the dentist with the facilities and what was available for his use or--more to the point--what was not available and would need to be acquired for the dental practitioner to become an effective member of the health team." (Project Response)

## 5. Continuation Education for Physical Therapists

A. Local Groups.

Local physical therapy groups in Raleigh, Winston-Salem, Wilmington and Chapel Hill-Durham often include education content in their meetings. For example, a program on cardiac conditioning was held during a staff meeting at Baptist Hospital, Winston-Salem. (See project response in Appendix I for other examples.)

B. Regional Groups.

Regional groups have been formed in the Charlotte, Asheville, and Greensboro areas. Regional programs include lecture-demonstrations, discussion groups, panel discussions, and workshops.

There have been four programs in the Charlotte area, four in the Asheville area, five in the Greensboro area (including two in April 1971) and six in the Chapel Hill area. (See project response in Appendix I for details.)

C. In-Service Education.

Three in-service education programs were held: two at Memorial Mission Hospital and one at St. Joseph's Hospital.

D. Successful Programs in Urban Areas.

The most effective areas for continuation education programs are the urban areas, where there are large numbers of physical therapists. In the rural areas, the number of physical therapists is small and the variety of facilities makes a program of great relevance to some, who have access to particular equipment, but irrelevant to others who do not have access.

## 6. Diabetes Consultation and Education Service

A. Short-Term Education Programs.

Eighteen short-term educational programs, varying from one-hour didactic presentations to two-day conferences, for physicians, nurses, and other health care personnel have been conducted throughout the state. The total attendance has been 3,520. (See project response in Appendix I)

B. Direct Patient Teaching.

The Diabetes Teaching Nurse gives instruction to patients according to his particular needs and then monitors the patient's management of the diabetic regimen. To date, an average of 95 patients were taught on a one-to-one basis each month.

C. Educational Materials.

The following educational materials were prepared to meet the needs of the practicing physician, the practicing nurse, and the patient with little or no ability to read. (See project response in Appendix I for more detailed comments on the educational materials.)

1. Guidelines to Diabetic Management
2. Diabetes Mellitus: A Reference for Nurses
3. Select-A-Meal
4. H-E-L-P
5. The Single-Concept Bulletin
6. Four journal articles have been published by project staff members.
7. Three papers, by the project staff were presented at the 1970 convention of the American Nurses Association and will be included in a book published by Appleton-Century-Croft.

7. Education and Research in Community Medicine

A. Five clinics have been established.

Clinics in Pediatric subspecialties:

1. allergy. This clinic meets once a month, for four hours at New Hanover Memorial Hospital in Wilmington. Two or three staff physicians are at each session. Case conferences for interested house staff members are held.

2. cardiology. This clinic meets once a month, for four hours at New Hanover Memorial Hospital in Wilmington. Case conferences on particular topics, such as congenital cardias anomalies have been held for interested staff members. Two or three staff physicians are at each session.

3. hematology. This clinic meets once a month, for four hours at New Hanover Memorial Hospital in Wilmington. Case conferences on specific topics, such as sickel cell disease and traits, have been held for interested staff

members. Two or three staff physicians are at each session.

Two otolaryngology clinics are held at:

4. Morganton. This clinic meets twice as month, for five hours at a time. Two or three staff physicians and two medical students attend each session.

5. Tarboro. This clinic meets once a month for five hours. Two or three staff physicians and two medical students attend each session.

B. The airplane for which RMP supplies funds "has facilitated physician reaching services to outlying areas of the state as well as to the medical school. A Thoracic Surgeon is flown from Chapel Hill to Wilson each month. An Orthopedist, Obstetricians and General Surgeons are brought from New Hanover Memorial Hospital in Wilmington to Chapel Hill to instruct medical students each week. An Orthopedic Surgeon and brace specialist are flown from Chapel Hill to Elizabeth City, Jacksonville, and Tarboro to provide services to patients in these areas." (Project Response)

C. Postgraduate training and education at New Hanover Memorial Hospital has taken place in the form of visiting chief programs. These are conducted on a regular basis for house staff.

D. Morganton, in which there is one clinic, and Jacksonville, to which an Orthopedic Surgeon and brace specialist is flown, are semi-rural areas. The remaining activities of the project are conducted in urban counties.

## 8. Innovations in Clinic Nursing

A. One course "Innovations in Clinic Nursing" was given in 1969-70. Twenty-seven of the 32 attending completed the course. Thirty of the students were from North Carolina, two from West Virginia. A second course, with 28 participants from North Carolina is presently being given, to be completed in April 1971. (See map with the project response in Appendix I.)

Student satisfaction with the course was measured by a scale ranging from 1 to 11, developed by Kropp-Verner. This course scored 4.3 (only two other courses in the last two years have scored higher). The nurses reported that they learned to refocus on the patient and his needs; the problems of the home situation; and were made more aware of the problems of interpersonal relations. "They felt they had improved their skill in working with people and would therefore be able to use personnel in more efficient ways, do better patient teaching and make more efficient use of all their contacts with patients and colleagues." (See project response in Appendix I for more detailed descriptions of student' self-evaluation.)

### 9. Tumor Tissue Registry

A. Six thousand and three hundred slides have been distributed to at least 85 physicians. Physicians can study the slides at their leisure and keep them permanently for future reference.

B. A repository of unusual and difficult material, relating to tumors, is developing and will be catalogued by approximately July 1, 1971.

C. At the UNC School of Medicine, the V.A. Hospital in Durham, and at the Duke University Medical Center, the Registry slides are used in teaching residents.

## Geographical Distribution of RMP Educational Programs

RMP'S educational programs discussed in this report are not uniformly distributed throughout North Carolina. Thirty-six of the state's 100 counties were not touched by any of the programs. Twenty-five counties hosted one RMP educational program and 39 counties had had more than one program. (See Map 1.)

The counties in which there have been one or several programs differ from those which have had no program. The average number of RMP educational programs is greatest in the metropolitan counties (average is five programs per metropolitan county) declining to approximately one program every fourth county (an average of .26 programs a county) in the rural counties. (See Table 2). While no metropolitan or urban county was without an educational program, six adjacent, eight semi-rural, and twenty-two rural counties were without any RMP sponsored education.

## Service Areas and RMP Educational Programs

As a function of this urban-rural dimension, the six medical service areas, which themselves differ in the proportions of their counties at various points on the urban-rural continuum, were differentially touched by the RMP educational activities. Service Areas I and VI are primarily rural; V is predominantly semi-rural; III is heavily semi-rural with one large metropolitan area, while II and IV are dominated by the urgan and metropolitan areas and their adjacent counties. (See Table 3) (See the Service Areas delineated on the maps in Appendix II).

Table 2: Average Number of RMP Educational Programs in North Carolina Counties on an Urban-Rural Continuum.

| Type of County | No. of Counties | Average Number of Programs Per County |
|---|---|---|
| Metropolitan | 6 | 5.00 |
| Urban | 17 | 3.35 |
| Adjacent | 18 | 1.22 |
| Semi-Rural | 29 | 1.48 |
| Rural | 30 | 0.26 |
| TOTAL | 100 | |

Table 3: Percent Counties in Each Service Area that are Rural, Semi-Rural, Adjacent and Urban and Metropolitan.

| Service Area | Rural | Semi-Rural | Adjacent | Urban and Metropolitan | Total |
|---|---|---|---|---|---|
| I | 47 | 18 | 29 | 06 | 100<br>(n = 17) |
| II | 17 | 08 | 42 | 33 | 100<br>(n = 12) |
| III | 06 | 44 | 12 | 38 | 100<br>(n = 16) |
| IV | 17 | 08 | 50 | 25 | 100<br>(n = 12) |
| V | 29 | 47 | 0 | 24 | 100<br>(n = 17) |
| VI | 46 | 35 | 0 | 19 | 101<br>(n = 26) |

Consistent with this information is the fact that the predominantly rural Service Areas, I, the mountains, and VI, the northeastern coastal counties, have no RMP educational programs in the majority of the counties (53% of the counties in Area I and 54% in Area VI). (See Table 4 .) In service areas II, III, IV, and V, 42%, 62%, 50%, and 47% of the counties respectively have more than one education program. Service Areas II, III and IV have large urban areas. Service Area V, with 76% of the counties classified as rural or semi-rural, looks as if it might be an exception to the relationship of urban areas with programs and the rural with the lack of programs. However, we should note not only that the large urban area of the Service Area, Wilmington, itself hosts six RMP educational programs, but also only one of the five rural counties has any educational program. Seven of the eight semi-rural counties are recipients of RMP educational programs.

Table 4: Percent of Counties with no RMP Project That Has an Educational Component; with One RMP Project; With More Than One RMP Project, by Service Area

| Service Area | No RMP Project | One RMP Project | More Than One RMP Project | Total |
|---|---|---|---|---|
| I | 53 | 35 | 12 | 100<br>(n = 17) |
| II | 17 | 42 | 42 | 101<br>(n = 12) |
| III | 13 | 25 | 62 | 100<br>(n = 12) |
| IV | 33 | 17 | 50 | 100<br>(n = 12) |
| V | 29 | 24 | 47 | 100<br>(n = 17) |
| VI | 54 | 15 | 31 | 100<br>(n = 26) |

## Urban-Rural Differences in Health Personnel and Facilities

In some ways, we can understand why those planning project activities have chosen the more urban areas of the state as sites for their educational programs. The average number of active physicians in metropolitan counties is 382.3, declining to a very few physicians in each of the rural counties (the average for the rural counties is 4.9). (See Table 5.) The number of health professionals who would benefit from these continuation education programs and the number of general hospitals as well as the size of these hospitals is greatest in the areas of the state which have the greatest population density.

Table 5: Total Number of Active Physicians and Average Number of Active Physicians by Type of County

| Type of County | Number of Counties | Total Number of Active Physicians | Average Number of Active Physicians |
|---|---|---|---|
| Metropolitan | 6 | 2,294 | 382.3 |
| Urban | 17 | 945 | 55.6 |
| Adjacent | 18 | 707 | 39.3 |
| Semi-Rural | 29 | 687 | 23.7 |
| Rural | 30 | 148 | 4.9 |

## Educational Projects and Geographic Location

Practically all project directors have found it important to conduct continuation education programs where greatest concentrations of the target group lie or where facilities are adequate. Therefore, it is necessary for the "Education and Research in Community Medical Care" and "Cancer Information Service" educational programs to be carried out in fairly large hospitals. The

"Tumor Tissue Registry" does its educating predominantly in urban areas where pathologists reside and work. (See Table 6). "Innovations in Clinic Nursing" is given at the UNC School of Nursing in Chapel Hill, but draws its students from all sections of the state; however, seventeen of the twenty-three counties from which students came were urban or metropolitan. In addition, programs for physical therapists were most effective in the urban areas where the majority of physical therapists live and work and where various types of equipment are readily available. A group of P.T.'s who practice in rural areas may each have different types of equipment and, therefore, would need different types of educational programs.

Table 6: Number of Pathologists in North Carolina as of January 1, 1970; by Type of County Grouped in Categories on an Urban-Rural Continuum.

| Type of County | Number of Counties | Number of Pathologists |
|---|---|---|
| Metropolitan | 6 | 105 |
| Urban | 17 | 28 |
| Adjacent | 18 | 38* |
| Semi-Rural | 29 | 14 |
| Rural | 30 | 0 |
| State Total | 100 | 185 |

*Includes UNC Medical School Faculty and Residents in Orange County.

However, the target groups are not always found only in the densely settled areas where the greatest numbers of physicians, allied health personnel and hospitals lie. Fourteen of the nineteen counties from which the "Comprehensive Stroke Program" had educated physicians and nurses are rural and semi-rural. The rural-urban dimension itself has not affected the success of the programs.

However, better programs tend to be in fairly large hospitals, those with 100-200 beds. In the very small hospitals the "small town doctor", especially if he is over 55, is not as anxious to alter the methods of management he has been using for many years.

Both the "Hypertension" and "Continuation Education in Dentistry" programs have experienced poorest relative attendance in the larger communities, and better relative attendance in the less urban places. (Attendance is calculated as the proportion of physicians attending, of the total number of target group active physicians in the county). The majority of the Hypertension seminars were given in urban areas. However, highest relative turnouts were in the semi-rural areas. This probably can be explained in part by the fact that in urban areas, many of the specialists have no interest in hypertension. But it can also be explained by the lack of competing educational programs in the semi-rural areas and also the relevance of information about hypertension to the physician with a rural practice. Even if this man is nominally a specialist, he is likely to have a less specialized practice than the urban specialist; therefore, being up to date on general medical knowledge might be more important for him, than his urban counterpart.

The dental project has an opposite objective, yet the outcome is similar. "Continuation Education in Dentistry" wants to bring the dentists more specialized knowledge. General dentists in the cities will leave the special situation of hospital dentistry to the specialist; therefore, the urban dentist is not apt to be very interested in this type of educational offering. However, dentists in less urbanized areas are more likely to find a need for this information, since they probably do not have a specialist in the area who can do the work.

The "Diabetic Consultation and Education Service" has had programs throughout the state in all types of settings.

Numbers Attending Educational Offerings

The largest professional groups educated by RMP projects were physicians (approximately 1,464), registered nurses (approximately 791), dentists (approximately 84), and physical therapists (the majority of physical therapists in the state). Table 7 below indicates the numbers of physicians the nurses educated by various projects:

Table 7: Approximate Number of Physicians and Nurses Educated by Various RMP Projects.

| Project | Approximate Number M.D.'s | Approximate Number R.N.'s and P.H.N.'s |
|---|---|---|
| Hypertension Project | 761 | 50 |
| Comprehensive Stroke Program | 179 | 681 |
| Cancer Information Service | 23* | |
| Tumor Tissue Registry | 85 | |
| Education and Research in Community Medicine | 9* | |
| Diabetic Consultation and Education Service | 407 | |
| Innovations in Clinic Nursing | | 60* |
| Total | 1,464 | 791 |

*Repeated Sessions, More Extensive Education.

## II
## RMP'S SERVICE ACTIVITIES

Health services can take many forms. The more direct approach can, for example, consist of mass innoculation and screening programs or the establishment of clinics. At demonstration-consultations or in teaching clinics, the patients used to demonstrate particular maladies are served directly, but the service is often secondary to the teaching function of the clinic. RMP guidelines have always emphasized continuation education and the establishment of regional relationships, which presumably would affect the quality of treatment thatthe general population of patients would receive both at the time of the RMP support and in future years. Therefore, as we will see in this section of the report, the impact of the RMP supported services is diffuse. Some individuals are benefitted because of an experimental program; others have the fortune of being seenand studied by university-based experts. In only four of the seven projects has patient treatment and service been one of the main foci of the project's activities.

RMP Projects Which Have Had Service Components:

| Project | Disease Focus | Target Groups |
|---|---|---|
| 1. A Community Program for the Early Detection and Management of Hypertension | Hypertension | Hypertension patients referred to the clinic at UNC |
| 2. Cancer Information Service | Cancer | Cancer patients at New Hanover Memorial Hospital |
| 3. Comprehensive Stroke Program | Stroke | Stroke patients in hospitals with stroke programs |
| 4. Diabetes Consultation and Education Service | Diabetes | Diabetics in areas with Diabetes Teaching Nurses |

RMP Projects Which Have Had Service Components: (Continued)

| Project | Disease Focus | Target Groups |
|---|---|---|
| 5. Education and Research in Community Medicine | Multiple | Patients in areas of clini |
| 6. Gestational Trophoblastic Neoplasia | Cancer | Female population of North Carolina |
| 7. Medical Library Extension Service | Multiple | Libraries and individuals |
| 8. Mobile Cardiac Intensive Care | Heart | Haywood County population |

Projects not included in this report, because reports were not, as of the date of this writing, handed in to RMP'S Research and Evaluation Division.

| | |
|---|---|
| 9. Coordinated Oncology Chemotherapy | Cancer |
| 10. Establishment of a Network of Coronary Care Units in Small Community Hospitals in Appalachia, North Carolina | Heart |
| 11. Heart Sounds Screening | Heart |

1. A Community Program for the Early Detection and Management of Hypertension.

A. The following number of patients were seen in the Hypertension Clinic:

1968 - 119
1969 - 273
1970 - 615 (96 new and 519 returns)

B. The following number of patients have been seen on consultations:

1968 - 72
1969 - 104
1970 - 133

C. Quality of care:

1. The Medical Service at North Carolina Memorial Hospital follows the suggested plan of diagnostic study and management. Most patients on other

services in hypertension are seen by the Hypertension Group in consultation. The Hypertension group is convinced that patients receive better care than prior to three years ago. There is uniformity in the diagnostic and management approach and the hospital staff takes a positive approach to the disease, which was not true formerly.

2. The average admission is now three days shorter than previously. In 1968, a hypertensive patients was admitted for diagnostic workup which required a nine day admission costing $699.50, whereas in 1969, another patient was admitted for the identical workup which required a four day admission costing $432.50. In 1971, 80-90% of the hypertensive workups require a three day admission.

D. The Hypertension laboratory makes certain diagnostic tests available to the patients.

2. Cancer Information Service

A. Indirect Services

1. By use of the telephone answering service, many North Carolina practitioners have gotten advice in regard to the care of patients. They have also used the service to refer patients to the University center.

2. The Telephone Tumor Board consultations have benefited particular patients at New Hanover Memorial Hospital.

3. Comprehensive Stroke Program

A. Local stroke programs have been developed in nineteen counties and involve 22 hospitals and 8 nursing homes.

B. Changes in Patterns of Patient Care:

1. Physicians who declined to participate initially have begun to participate as they note the better pattern of care in patient treatment according to the guidelines.

2. Personnel show increased interest in patients; the family seems less reluctant to receive the patient again in the home. (See Table 8)

3. Patients receive better in-hospital treatment, as well as better clinical and laboratory evaluations. (See Tables 9, 10, and 11.)

4. The public health nurse is receiving referrals for the first time. With the State Board of Health Physical Therapy consultant, the physicians now use these resources for follow-up care of their patients.

5. Early discharge planning has not resulted in substantially shorter stays (an average of 22.7 days of patients on the program versus 23.1 for patients before the program); however, the public health nurse and the nursing home nurse are involved, for the first time, prior to discharge.

6. Each patient on the program is followed by a public health nurse who forwards a report every three months to the Stroke Program Office. At present quality of survivorship data are available on over 100 patients followed for 2-9 months.

7. The patient and his family are taught how to conduct passive exercise, transfer and ambulation. This has facilitated discharge.

Table 8: What Happens to Patients at Discharge Before the Program and On the Program.

| | Before Program<br>Percent of Patients | On Program<br>Percent of Patients |
|---|---|---|
| Mortality | 15 | 11 |
| Nursing Home ECF | 12 | 19 |
| Home | 40 | 52 |
| Other | 33 | 18 |
| Average Length of Stay | 23.1 days | 22.7 days |

Table 9: Patient In-Hospital Treatment Before Program and On Program.

| | Before Program<br>Percent of Patients | On Program<br>Percent of Patients |
|---|---|---|
| P.T. Consults | 15 | 64 |
| Other Consults | 2 | 9 |
| Stroke Guidelines | 15 | 100 |
| P.T. Within 48 hours | 0 | 29 |

Table 10: Clinical Evaluation of Patients Before the Program and On the Program.

| | Before Program<br>Percent of Patients | On Program<br>Percent of Patients |
|---|---|---|
| Onset, signs, symptoms | 82 | 91 |
| Weakness, side severity | 57 | 76 |
| Functional capacity | 61 | 91 |
| Speech dysfunction | 61 | 85 |

Table 11: Laboratory Evaluation of Patients Before the Program and On the Program.

| | Before Program<br>Percent of Patients | On Program<br>Percent of Patients |
|---|---|---|
| Blood Pressure | 76 | 94 |
| Blood Sugar | 37 | 60 |
| EKG | 27 | 48 |
| Chest X-ray | 35 | 58 |
| Other Tests | 16 | 29 |

### 4. Diabetes Consultation and Education Service

1. The Diabetes Teaching Nurse teaches the recommended diabetic regimen to patients and their families, provides or plans for continuity of patient care, seeks or coordinates services of the desired communities agencies for the benefit of the patient.

2. An average of 90.6 patients were taught per month. These required 1,595 teaching contacts -- 1,113 in-patients, 380 out-patients and 102 patients at home.

3. In 1969 there were 643 new patients in the program (53.6 monthly average) and in 1970 there were 601 new patients (50.1 monthly average).

### 5. Education and Research in Community Medicine

A. Indirect Services:

Patients are seen at the following clinics. Pediatric clinics at New Hanover Memorial Hospital, each held once a month for approximately four hours in the following subspecialties: (1) allergy; (2) cardiology; and (3) hematology. Otolaryngology clinics are held twice a month for five hours in (4) Morganton and once a month for five hours in (5) Tarboro.

B. An orthopedic surgeon and brace specialist are flown from Chapel Hill to Elizabeth City, Jacksonville and Tarboro to provide services to patients in these areas.

### 6. Gestational Trophoblastic Neoplasia

A. 1. The Center has had patient physician contacts from over 1,000 individuals on at least one occasion. Each one might require multiple contacts in the follow up of each patient by either telephone, letter or patient referral. Therefore, the program has had over 10,000 consultations.

2. About 40% of these contacts and discussions were with physicians from North Carolina; the other 60% were predominantly from other southeastern states.

3. Over 15,000 gonadotropin assays have been performed.

4. Over 90% of the patients has some form of trophoblastic disease, usually benign and clearing spontaneously, documented through the use of the assays. About 200 individuals (1/5 of the cases) had malignant trophoblastic disease.

5. There have been eight deaths in the 200 patients with malignant trophoblastic disease and none from those with benign disease or no disease. This is a cure rate of 95% of patients over half of whom hadmetastatic disease at the time therapy was initiated and the diagnosis documented.

B. The project director feels that the remission rate under standard forms of therapy without sufficient assays and without the knowledge and techniques of the Center would be 50 to 75%, rather than 95%.

## 7. Medical Library Extension Service

A. The Library Service cooperated with 4,409 individuals and 5,747 libraries throughout the State by fulfilling requests for books or articles.

B. The number of interlibrary loan requests is leveling off, while the number of reference requests is increasing as its usefulness becomes recognized by the medical community.

C. More than 2000 volumes of journals have been supplied through the duplicate journal service.

## 8. Mobile Cardiac Intensive Care

A. Area served by Mobile Coronary Care Unit (CCU):

1. Haywood County Hospital
2. Estimated population residing or working in the area: 39,711.

B. Anyone can call for service 24 hours a day.

C. Services donated:

1. Ninety hours of training time, by physicians, to Haywood County Rescue Squad.

2. Twenty-four hour physicians supervision of Haywood County Rescue Squad.

3. Teams of three volunteer Rescue Squad member on duty 24 hours per day.

4. Vehicle which was also used in routine emergencies.

D. Operational Statistics:

113 calls answered. Of the 100 individuals transported to the hospital by mobile CCU, all arrived at the hospital alive, one died in the emergency room, seven were discharged, and 92 were hospitalized. Thirteen individuals were found dead on the arrival of the mobile CCU.

E. Therapy Statistics:

| | |
|---|---|
| 1. Number of individuals who received CPR and one or more defibrillations | 0 |
| 2. Number of individuals who received CPR only | 3 |
| 3. Number of individuals who received one or more defibrillations without CPR | 0 |
| 4. Number of individuals who received medications | 16 |

Of those who were not sudden deaths, there were surprisingly few problems enroute to the hospital.

F. The Rescue Squad members act as interpreters of the program to the communit thich has led to greater utilization of the service and some breakdown in patient delay in calling for the mobile CCU.

G. The medical community has been made aware of the need for immediate monitoring and treatment of heart attack patients through the use of the mobile CCU as an adjunct of the coronary and intensive care units. This has led to more use of drug therapy before hospital arrival.

H. Because of the unique cardiac care duties performed by the Haywood County Rescue Squad, this organization was asked to conduct a seminar on mobile cardiac care to the Southeastern Rescue Squad Association. As a result there has been much interest shown by other rescue squads in initiating this cardiac function in their communities.

## Geographical Distribution of Services

The lack of emphasis on the service aspect of RMP'S activities is suggested by the fact that only twenty-eight of North Carolina's counties are served by the five patient service projects on which we can establish geographical distribution. (Thy Hypertension Program and the Gestational Trophoblastic Neoplasia program probably serve patients from these twenty-eight, as well as other counties.) (See Map 2).

Table 12 suggests that the urban-rural distribution of RMP related services are generally more heavily concentrated in the rural section of the state, than in the heavily populated areas. However, when we look more closely, we see that different projects concentrate their activities in characteristic settings. The Comprehensive Stroke Program is the only project that is more active in the semi-rural and rural counties, than in the more heavily populated areas. The Education and Research in Community Medicine program has the majority of its clinics and services in the urban counties of New Hanover and Edgecombe. The Diabetes Consultation and Education Program is heavily committed in and near the large centers of population. When service is secondary to the teaching function and when a large institutional setting is needed, as in the cases of the Cancer Information Service and the Education and Research in Community Medicine, the choice of project sites is understandable.

The Medical Library Extension Service serves libraries and individuals primarily physicians, not patients. Therefore, it is considered separately from the patient-oriented service projects. This project has served large numbers of every type of county in the State. All of the urban and metropolitan counties were served in one way or another and over half of the other types of counties had contact with this project. (See Table 12.)

Table 12: Proportion of Counties Served by Medical Library Extension Service.

| Type of County | Number of Counties | Number of Counties Served | Proportion of Counties Served |
|---|---|---|---|
| Metropolitan | 6 | 6 | 1.00 |
| Urban | 17 | 17 | 1.00 |
| Adjacent | 18 | 11 | .61 |
| Semi-Rural | 29 | 24 | .83 |
| Rural | 30 | 16 | .53 |

## Services by Service Area

As we can see in Tables 14 and 15, that while the number of counties which host RMP service programs is greatest in the semi-rural and rural areas, the proportions of counties in which there are programs are greatest in the more populated Service Areas (II, III, IV, V), although often in the less populated, as well as the metropolitan regions of those service areas.

Table 13: Geographical Distribution of RMP Service-Supported Activities[1]

| Project | Metro-politan | Urban | Adjacent | Semi-Rural | Rural | Total |
|---|---|---|---|---|---|---|
| Cancer Information Program | 0 | 1 | 0 | 0 | 0 | 1 |
| Comprehensive Stroke Program | 0 | 3 | 2 | 9 | 5 | 19 |
| Diabetes Consultation and Education Program | 3 | 0 | 2 | 0 | 1 | 6 |
| Education and Research in Community Medicine | 0 | 2 | 0 | 2 | 0 | 6 |
| Mobile Cardiac Intensive Care | 0 | 0 | 1 | 0 | 0 | 1 |
| Total | 3 | 5* | 4** | 10*** | 6 | 28 |

*New Hanover and Edgecombe Counties each hosted two projects.

**Haywood County hosted two projects.

***Burke County hosted two projects.

Number of People Served

There is no accurate estimate of those who have been served by the sum total of RMP service activities, because we have no estimates of how many patients have been seen in the various teaching clinics.

However, we do know that approximately 797 patients were seen in the Hypertension Clinic. The Comprehensive Stroke Program has survivorship data on at least 100 patients for a 2-9 month period. The Diabetes Consultation and Education Service has helped at least 1, 244 diabetics. The Gestational Trophoblastic Neoplasia program has had over 1,000 patient-physician contacts during the grant period, while the Mobile Cardiac Intensive Care program has answered 113 emergency calls, during its granting period. This gives us a minimum number of persons, 3,354, who have been served by RMP funds.

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[1] The Hypertension Program and Gestational Trophoblastic Neoplasia project reports have not given the geographical distribution of patients.

Table 14: Distribution of Service Programs by Number of Counties in Each Service Area. Counties are Grouped in Categories on an Urban-Rural Dimension.

| Service Area | Metropolitan | Urban | Adjacent | Semi-Rural | Rural | Total |
|---|---|---|---|---|---|---|
| I | 0 | 0 | 2 | 0 | 1 | 3 |
| II | 1 | 0 | 1 | 0 | 2 | 4 |
| III | 1 | 1 | 0 | 3 | 1 | 6 |
| IV | 1 | 0 | 1 | 1 | 0 | 3 |
| V | 0 | 2 | 0 | 4 | 1 | 7 |
| VI | 0 | 2 | 0 | 2 | 1 | 5 |
| Total | 3 | 5 | 4 | 10 | 6 | 28 |

Table 15: Proportion of Total Possible Counties in Which There Are Service Programs, by Service Area. Counties and Grouped Categories on An Urban-Rural Dimension.

| Service Area | Metropolitan | Urban | Adjacent | Semi-Rural | Rural | Total |
|---|---|---|---|---|---|---|
| I | 0 | -- | 40 | 0 | 13 | 18 |
| II | 50 | 0 | 20 | 0 | 100 | 33 |
| III | 100 | 20 | 0 | 43 | 100 | 38 |
| IV | 50 | 0 | 17 | 100 | 0 | 25 |
| V | -- | 50 | -- | 50 | 20 | 41 |
| VI | -- | 40 | -- | 22 | 8 | 19 |

## III

## RMP CONSULTATION ACTIVITIES

Consultation services are a part of several projects which have their primary activities in the areas of education and/or service. (The core staff of NCRMP also provide consultation services, but these have not been included in this report.) The consultation provides an opportunity for the state's physicians to gain information and advice on a specific problem rather than about a general condition. The consultative activities of the project, therefore, to an extent depend on the demand by individual practitioners or groups of practitioners. The demand is often stimulated by the project's other activities, and in many cases only by the other project activities does the practitioner know that consultative services are available.

It is likely, although we do not have pertinent data, that the consultation service has a more immediate effect on the treatment of disease than educational services. However, the effect is different in that consultations give the practitioner specific information for a particular problem; he does not often get the kind of information that is generalizeable to other cases.

It will be difficult to discuss the impact of RMP sponsored consultations on the treatment of chronic diseases in North Carolina. We are not clear in most cases how many consultations were given nor the geographical location of those receiving the consultation. This information would be essential before we could speculate on the effect of consultations on the management of disease throughout the state.

RMP Projects which have given consultation:

| | | Disease Focus |
|---|---|---|
| 1. | Cancer Information Service | Cancer |
| 2. | Comprehensive Stroke Program | Stroke |
| 3. | Continuation Education in Dentistry | Multiple |
| 4. | Continuation Education for Physical Therapists | Multiple |
| 5. | Diabetes Consultation and Education Service | Diabetes |
| 6. | Medical Library Extension Service | Multiple |

Project not included in this report, because project reports were not, as of the date of this writing, handed in to RMP'S Research and Evaluation Division:

| | | |
|---|---|---|
| 7. | Closed Chest Cardiopulmonary Resuscitation Program | Heart |
| 8. | Coordinated Oncology Chemotherapy | Cancer |
| 9. | Coronary Care Training and Development | Heart |
| 10. | Heart Consultation and Education Program | Heart |

1. Cancer Information Service

A. The Cancer Information Service has set up a telephone consultation service Practitioners in North Carolina with questions concerning cancer would be able to phone the project office and be connected with some specialist who could answer their particular questions.

The following list gives the specialty of the callers:

| | |
|---|---|
| Gyncology | 68 |
| Medicine | 93 |
| General Practice | 77 |
| General Surgery | 104 |
| Orthopedics | 1 |
| Urology | 1 |
| ENT | 7 |
| Pathology | 1 |
| Radiotherapy | 5 |
| Dentistry | 9 |
| Social Service | 1 |

The following list gives the specialty of the consultants:

| | |
|---|---|
| Gyncology | 89 |
| Medicine | 161 |
| Pediatrics | 5 |
| General Surgery | 66 |
| Orthopedics | 6 |
| Urology | 2 |
| Neurosurgery | 2 |
| Plastic | 4 |
| Thoracic | 5 |
| ENT | 5 |
| Radiotherapy | 9 |
| Dentistry | 4 |
| Social Service | 1 |

Calls were received from callers in fifty-six counties in North Carolina, as well as two in Tennessee, three in Virginia, and three that were unidentified.

B. Seventy-eight percent of the completed replies indicated that the calls were helpful.

C. Seventy-four percent of the completed replies stated that the management of the disease changed.

D. Seventy-two percent of the completed replies states local disposition.

Direct care = 185
Local consultant = 31
Medical Center = 81

E. Many physician have used the Service for the referral of patients to the Medical Center. It also has brought many of the practitioners in close communication with the project office in regard to the care of their patients.

2. Comprehensive Stroke Program

A. A neurologist, a nurse and a physical therapist on the staff of the Stroke Program are contacted by physicians and nurses on the average of once a week for consultations. The number of consultations requested increases as communities gain experience; however, the Stroke Program staff is surprised that the number of consultations requested is not greater than in fact it is.

B. The Stroke Program has agreed to defray the expenses of a medical center faculty member who is requested by a community stroke program to address a Medical Society meeting on diagnosis and treatment of stroke.

C. For a "Before Program" sample of 158 patients and an "On Program" sample of 234 patients, the proportion who received physical therapy consultations rose from 15 to 64 percent, while the percent of other consultations rose from 2 to 9 for those on the program.

3. Continuation Education in Dentistry

A. Consultative services have been given to dentists, physicians and hospital administrators. Most consultations have to do with the most appropirate and practical type of dental care facilities that can be installed in community hospitals. Hospital administrators have been advised that portable dental equipment will take up the least amount of space and that the expenditure for the portable equipment is more easily justified than for a more conventional stationary set up. Dentists in the local community have requested consultations regarding dental facilities in the community hospital.

B. Consultations have been received and given to other RMP projects, such as those dealing with heart disease and stroke.

4. Continuation Education for Physical Therapists

A. Consultation services averaging twice a month are given to the physical therapists in the Charlotteand Asheville areas to plan for regional meetings. A minimum of one consultation per month has been given to the physical therapists in the Greensboro-High Point area to help with program planning. An average of two consultations for program planning has been given to physical therapists in Raleigh, New Bern, Wilmington, Wilson, Greenville, and Winston-Salem.

B. The following hospitals have been given consultations concerning administration:

Asheville Orthopedic Hospital
Memorial Mission Hospital, Asheville
Presbyterian Hospital, Charlotte
Sampson County Hospital, Clinton
Thomasville
North Carolina Baptist Hospital
Randolph County Health Department

In addition "physical therapists from Buncombe, Orange and Wake Counties have requested assistance in providing resource material for in-service education programs." "One physical therapist in Henderson County requested a bibliography of recommended library books." "Physical therapists in all area of the state have requested assistance with recruitment of staff." "Four physical therapists have requested information on development of cardiac reconditioning programs." (project response)

C. Consultation concerning patient treatment has been given at the Memorial Mission Hospital, Asheville and the Asheville Orthopedic Hospital. Consultation regarding patients, particularly stroke patients has been given in Greensboro.

D. "Additional consultation has included identifying resource people to assist physical therapists with their problems as well as helping them to delineate their own needs. Assistance has also been requested on purchase of equipment, utilization of equipment, assistive aids that can be used by patients, and where these aids can be purchased if they cannot be made locally." (project response)

## 5. Diabetes Consultation and Education Service

A. The physicians and nurses of the Diabetes Service staff make themselves available for telephone consultations regarding individual patients. These telephone consultations are usually the result of the educational programs.

B. Several physician and some nursing programs have included a structured patient consultation as part of the program. On-going consultation occasionally results.

C. Miss Julia D. Watkins has consulted with physicians and nurses in the Tennessee Mid-South region regarding a proposal for a diabetes service in that area.

6. Medical Library Extension Service

A. Several Medical libraries have been given advice on establishing and organizing hospital libraries:

Buncombe County Medical Society Library - Asheville
Alcoholic Rehabilitation Center Library - Black Mountain
Murdoch Library, John Umstead Hospital - Butner
Chowan Hospital Medical Library - Edenton
Cape Fear Valley Hospital - Fayetteville
Highsmith Rainey Memorial Hospital - Fayetteville
Cherry Hospital Medical Library - Goldsboro
Health Affairs Library, ECU - Greenville
Richard Baker Hospital Medical Library - Hickory
Lenoir Memorial Hospital Medical Library - Kinston
Catawba Memorial Hospital Medical Library - Newton
Moore Memorial Hospital Medical Library - Pinehurst
Beaufort County Hospital - Washington
New Hanover Memorial Hospital Medical Library - Wilmington
Reynolds Memorial Hospital Medical Library - Winston-Salem

## Types of Consultations

The types of consultation offered by the RMP projects varied by disease focus as well as the type of information that was provided. Information was provided to physicians and nurses concerning aspects of treatment for patients with cancer, strokes, diabetes, and the variety of diseases for which patients need physical therapy. Dentists, physicians and hospital administrators were counselled as to the types of dental facilities which are most appropriate for use within a hospital. The state's physical therapists received a wide range of consultative advice ranging from program planning and administrative problem areas to patient treatment.

Since no explicit list of consultations was provided by most of these projects, it is impossible to tell how many consultations were made, and mostly whether the management of chronic diseases was changed by these consultations. We do know, however, that the Stroke Program was not satisfied with the number of requests for consultation made by physicians and nurses. They are, however, optimistic for the future of their consultation program, since more consultations have been requested as communities gain experience with local stroke program. In addition 64% of the patients on the local stroke program lists have had physical therapy consultations, as opposed to only 15% of those patients which were not treated by the program participants.

Approximately three-fourths of the callers to the Cancer Information Service who returned questionnaires felt that the consultations were helpful, that the management of the disease was changed as a result of the consultation and that the disease was treated locally.

## Geographical Distribution of Consultations

Only three of the projects, the Cancer Information Service and Continuation Education for Physical Therapists and Medical Library Extension Service, have provided us with information on the geographical distribution of consultations. Both the number and proportion of counties in which consultations have been given by physical therapists is greater, the more urban the counties. (See Table 16). The activities of this project, as noted before, are centered in the urban areas, where most physical therapists live and work.

In general, the more urban the county, the greater the proportion of counties in which physicians have used the telephone answering service. (See Table 17.)

However, the number of calls received does not have any relationship to the number of active physicians in the urban or rural counties. (See Table 18.)

With the Medical Library Extension Service, as with the other two projects, the greatest concentration of counsultative activities is in the heavily populated areas of the state. In fact two-thirds of the consultations took place in metropolitan and urban areas. (See Table 19.)

Service Areas

The physical therapy consultations were given in every service area of the state, with the greatest number given in Service Area II. (See Table 20.)

Table 16: Number and Proportion of Counties in North Carolina in Which Consultatio by the Continuation Education for Physical Therapists Project Have Been Given.

| | Number of Counties | Number of Counties with Consultations | Proportion of Counties with Consultations |
|---|---|---|---|
| Metropolitan | 6 | 5 | 83 |
| Urban | 17 | 4 | 24 |
| Adjacent | 18 | 3 | 17 |
| Semi-Rural | 29 | 2 | 7 |
| Rural | 30 | 0 | 0 |
| Total | 100 | 14 | |

Table 17: Number and Proportion of Counties Served by the Cancer Information Service, Counties are Grouped in Categories on an Urban-Rural Continuum.

| | Total Number of Counties | Number of Counties Served | Proportion of Counties Served |
|---|---|---|---|
| Metropolitan | 6 | 6 | 100 |
| Urban | 17 | 16 | 94 |
| Adjacent | 18 | 8 | 44 |
| Semi-Rural | 29 | 20 | 69 |
| Rural | 30 | 6 | 20 |
| Total | 100 | 56 | |

Table 18: Number of Physicians, Number of Calls and Proportion of Physicians Who Made Calls. Counties are Grouped into Categories on an Urban-Rural Continuum.

| | Number of Active Physicians | Number of Calls | Proportion of Physicians Who Called* |
|---|---|---|---|
| Metropolitan | 2,294 | 60 | 3 |
| Urban | 945 | 126 | 13 |
| Adjacent | 707 | 26 | 4 |
| Semi-Rural | 687 | 92 | 13 |
| Rural | 148 | 21 | 14 |

*There is no way for us to tell whether a physician made more than one call.

Table 19: Number of Counties in which Consultations were Given by the Medical Library Extension Service, by Urban-Rural Type of County.

| County Type | Number of Counties |
|---|---|
| Metropolitan | 2 |
| Urban | 6 |
| Adjacent | 1 |
| Semi-Rural | 3 |
| Rural | 0 |
| Total | 12 |

Table 20: Number of Counties in which Physical Therapists gave Consultations, by Service Areas and Urban-Rural Groupings.

| Service Areas | Metropolitan | Urban | Adjacent | Semi-Rural | Rural | Total |
|---|---|---|---|---|---|---|
| I | 1 | * | 1 | 0 | 0 | 2 |
| II | 2 | 1 | 1 | 0 | 0 | 4 |
| III | 1 | 0 | 0 | 0 | 0 | 1 |
| IV | 1 | 0 | 1 | 0 | 0 | 2 |
| V | * | 1 | * | 1 | 0 | 2 |
| VI | * | 2 | * | 1 | 0 | 3 |

*There are no counties of this type in the Service Area.

Service Area II was the only one in which a considerable proportion of the counties benefitted from PT consultations. In all of the other Service Areas, very small numbers of counties, in most cases only the urban centers were reached. (See Table 21.)

Table 21: Proportion of Counties in which Physical Therapists gave Consultations, by Service Area

| Service Area | Number of Counties | Number of Counties with Consultations | Proportion of Counties with Consultations |
|---|---|---|---|
| I | 17 | 2 | 12 |
| II | 12 | 4 | 33 |
| III | 12 | 1 | 8 |
| IV | 12 | 2 | 16 |
| V | 17 | 2 | 12 |
| VI | 26 | 3 | 12 |

The number of counties in which physicians made calls to the Cancer Information Service does not vary very much by Service Area. The proportion of counties with physicians who called is lowest in the mountains (Service Area I) and in the northeastern coastal counties (Service Area VI). (See Tables 22 and 23.)

Table 22: Number of Counties in Which Physicians Made Calls to the Cancer Information Service by Service Areas and Urban-Rural Groupings.

| Service Areas | Metropolitan | Urban | Adjacent | Semi-Rural | Rural | Total |
|---|---|---|---|---|---|---|
| I | 1 | * | 2 | 2 | 2 | 7 |
| II | 2 | 2 | 2 | 0 | 1 | 7 |
| III | 1 | 5 | 0 | 6 | 0 | 12 |
| IV | 2 | 1 | 4 | 1 | 0 | 8 |
| V | * | 4 | * | 6 | 2 | 12 |
| VI | * | 4 | * | 5 | 1 | 10 |
| Total | 6 | 16 | 8 | 20 | 6 | |

*No Counties in this category.

Table 23: Total Number of Counties, Number and Proportion of Counties from Which Physicians Called the Cancer Information Service, by Service Area.

| Service Area | Total Number of Counties | Number of Counties With Program | Percent |
|---|---|---|---|
| I | 17 | 7 | 41.0 |
| II | 12 | 7 | 58.0 |
| III | 16 | 12 | 75.0 |
| IV | 12 | 8 | 67.0 |
| V | 17 | 12 | 71.0 |
| VI | 26 | 10 | 38.0 |

The consultations given by the Medical Library Extension Service were centere in Service Areas V and VI. (See Table 24.)

Table 24: Number of Consultations given by the Medical Library Extension Service, by Service Area.

| Service Area | Number of Consultations |
|---|---|
| I | 1 |
| II | 1 |
| III | 1 |
| IV | 1 |
| V | 4 |
| VI | 4 |
| Total | 12 |

## IV

## RMP'S SUPPORT OF ONGOING FORMAL RELATIONSHIPS

The Regional Medical Program Guidelines stated that one of the priorities for funding would be the establishment of regional relationship. What precisely was menat by regional relationships was never clearly spelled out. The local North Carolina group never defined what they wanted regional relationships to mean and therefore, there was no coordinated effort to fund projects which would set up these regional relationships. Therefore, what we have when we study the regional efforts of the projects themselves is a series of individual relationships set up between the medical centers and local hospitals, or between the professional associations of the state and local practitioner groups, or between state agencies and local hospitals.

These individual relationships might be meaningful in particular cases, but it would seem that the long term effect would have been greater if several regions had been delineated and centers pinpointed, so that individual relationships to and from that center would have been reinforced by other relationships focusing at that same center. But this was not done. We can discuss what has been accomplished. But it is hard to speculate on what will remain from these relationships once the funding has ceased and the programs stand on their own or local funding.

A. The following projects have established formal ongoing relationships:

| | Type of Relationship |
|---|---|
| 1. Cancer Information Service | between medical schools and hospitals |
| 2. Central Cancer Registry | between state agency and hospitals |
| 3. Comprehensive Stroke Program | between local stroke programs and local agencies |

| | | |
|---|---|---|
| 4. | Continuation Education in Dentistry | between dentists, dental societies, and dental school |
| 5. | Continuation Education for Physical Therapists | formed regional groups; sharing of manpower |
| 6. | Diabetes Consultation and Education Service | contacts with community agencies; began state association; sharing of manpower |
| 7. | Education and Research in Community Medicine | between medical school and hospitals |
| 8. | Gestational Trophoblastic Neoplasia | large medical center and smaller medical center |
| 9. | Tumor Tissue Registry | between state group and project |

1. Cancer Information Service

A. Formal relationships have been established between Duke and New Hanover Memorial Hospital and between Bowman-Gray and Memorial Mission Hospital in Asheville. These are likely to continue.

2. Central Cancer Registry

A. The Central Cancer Registy has been established at the following hospitals

VA Hospital, Durham

N. C. Memorial Hospital, Chapel Hill

N. C. Baptist, Winston-Salem

Watts Hospital, Durham

Southeastern General Hospital

New Hanover Memorial Hospital

Duke Hospital, Durham

Craven County Memorial Hospital

Charlotte Memorial Hospital

Catawba Hospital

Cabarras Hospital

Carteret General Hospital

Cleveland County Memorial Hospital

Moore Memorial Hospital

Pitt County Memorial Hospital

Richmond Memorial Hospital

Valdese General Hospital

Wake County Memorial Hospital

B. The State Board of Health will complete take over of the Central Cancer Registry.

3. Comprehensive Stroke Program

A. The Comprehensive Stroke Program has established local Stroke Programs at twenty-two hospitals and eight nursing homes in nineteen counties of North Carolina.

B. Formal relationships have been formed with nineteen Public Health Departments (including one in Virginia), nineteen Social Service Departments, as well as the Physical Therapy, Chronic Disease and Multiphasic Screening Clinic sections of the North Carolina State Board of Health.

4. Continuation Education in Dentistry

A. 1. There have been formal relationships set up between the UNC School of Dentistry and six community hospitals: Pitt County Hospital, Wilson Memorial Hospital, Annie Penn Hospital, Rowan Memorial Hospital, Memorial Mission Hospital and Margaret K. Pardee Hospital.

2. Local dentists have worked with the project directors coordinating the project and acting as liaison between the dental school and local societies in the following counties: Beaufort, Pitt, Wilson, Rockingham, Rowan, Buncombe and Henderson.

3. The project has worked closely with the North Carolina Dental Society.

B. These relationships are expected to continue. Dental School faculty members will continue to set up programs for local societies. In addition, the dental school, local dentists and hospitals would like to continue to develop hospital dental service.

5. Continuation Education for Physical Therapists

A. Groups of physical therapists have formed regional groups in the Charlott area, the Asheville area and the Greensboro area.

B. Sharing of Manpower.

1. Physical therapy service for the satellite hospitals of Wake County Memorial Hospital is provided by the Raleigh Staff.

2. Two physical therapists from Winston-Salem provide service for the Mt. Airy area and for a number of extended care facilities and nursing homes.

3. Home Health Services, extended care facilities and nursing homes in Durham and Orange counties have physical therapists available.

4. Physical therapists from Charlotte Memorial Rehabilitation Hospitals rotate through Community Hospital and the chronic disease hospital in Huntersville.

5. One physical therapist is employed by the hospitals in Banner Elk and Spruce Pine.

6. Asheville physical therapists provide services to a number of facilities in Asheville, Saluda and Tryon.

C. A working relationship has been developed with the Comprehensive Stroke Program, to aid in planning and presentation of the physical therapy portion of the first basic training program.

D. Physical therapists from the medical school hospitals and the North Carolina State Board of Health serve on the Advisory Committe in addition to five physical therapists from different geographical areas.

## 6. Diabetes Consultation and Education Service

A. On behalf of patients, several community agencies, such as the Department of Public Welfare, Public Health Department, Commission for the Blind, civic groups, church groups have been contacted.

B. The project helped begin the North Carolina Diabetes Association and subsequently has helped local chapters--in Mecklenberg, Haywood, and Forsyth counties, in Raleigh and Greensboro--in affiliating with the State organization.

C. Several local hospitals in Charlotte, Waynesville, Sylva, Durham, Winston-Salem, Chapel Hill, Raleigh, Greensboro, Greenville, and Wilmington have cooperated in the employment of a Diabetes Teaching Nurse and in the setting up of the new DTN programs.

## 7. Education and Research in Community Medicine

A. The UNC Medical School has ongoing affiliations with Charlotte Memorial, Wake Memorial, Moses Cone, New Hanover Memorial, Edgecombe General, Rocky Mount, New Nash General and High Point Memorial Hospitals.

## 8. Gestational Trophoblastic Neoplasia

A. There are close linkages between the Duke Center and other medical centers in North Carolina and the Southeast. About half of the patients are actually treated in these other community and state centers. The Duke Center provides consultation for the interpretation of gonadotropin results and for methods of therapy.

### 9. Tumor Tissue Registry

A. The project is closely tied to the Pathology Division of the Medical Society of the State of North Carolina. The Consulting Panel is drawn from the Society, which often acts as advisor to the project.

## Types of Relationships

One of the Regional Medical Program's main goals was to facilitate the establishment of regional ongoing relationships. The North Carolina region has funded several types of relationships. There was no unified, organized effort to delineate regions, or to have central foci at which many surrounding areas were aimed. Rather each project was on its own to establish some relations, whether they were between a medical school and a hospital or a state agency, or between groups of physical therapists, or if it meant the sharing of manpower.

### A. Universities and Local Hospitals:

The three medical schools in the state are tied to local hospitals through three projects. The Cancer Information Service ties Duke Medical School to the New Hanover Memorial Hospital and Bowman-Gray Medical School to Memorial Mission Hospital in a formal way. Education and Research in Community Medicine ties the UNC Medical School to several local hospitals. The Gestational Trophoblastic Neoplasia program ties Duke Medical Center to many other medical centers in the state as well as the Southeast. The UNC School of Dentistry is tied to several local hospitals theough the efforts of the Continuation Education in Dentistry program.

### B. Professional Association and Practitioners:

RMP has had several different kinds of relationships with state professionals and their societies. Its funding has helped the regionalization of several physical therapy groups in the urban areas of the state. The UNC School of

Dentistry has worked through the local dental societies and the North Carolina Dental Society in easing the way for hospital dental facilities. The Tumor Tissue Registry has been helped by the Pathology Division of the Medical Society of North Carolina, in return the distribution of the tumor slides provides an educational function for members of the Division. The North Carolina Diabetes Association was formed by the Diabetes Consultation and Education Service, which helped local chapters affiliate with the state group.

C. Agencies and Hospitals:

The Cancer Registry set up the relationship between the State Board of Health and several local hospitals. The RMP funded project has stepped out of the picture after it initially set up the registry information gathering system in the local hospitals. The State Board of Health will be in charge of collecting this data and of setting up similar data gathering situations in other local hospitals throughout the state.

The Comprehensive Stroke Program has set up local stroke programs in hospitals and nursing homes in the state. These local stroke programs maintain ties with local Public Health Departments, Social Service Departments and sections of the State Board of Health.

D. Manpower:

The Continuation Education for Physical Therapists project has helped set up situations in which manpower is shared by several institutions in a geographical area. Often one hospital, particularly those in rural areas, cannot afford and do not need a full time physical therapist and would not hire a full time position if they could not share the costs with another hospital.

The Diabetes Teaching Nurse has been hired in many hospitals because of the encouragement and support of the Diabetes Consultation and Education Program.

Without initial project support, it is likely that this type of professional would not have become part of the hospital staff.

## Project Relationships by Geographical Distribution

The projects which set up formal ongoing relationships exist in forty counties of every type from the metropolitan to the rural (See Map 3.) In general, the more metropolitan the county, the greater the probability that a county has a project. The exception to this is the semi-rural counties, 48% of which have projects which establish formal relationships. (See Table 25.) In addition, the absolute number of projects is greater and the average number of projects per county is greater, the more urban the county. Again the semi-rural counties get more projects than we might otherwise assume. (See Table 26.)

Table 25: Number of Counties, Number of Counties with Projects and Proportion of Counties with Projects with Ongoing Relationships, Counties are Grouped on an Urban-Rural Continuum.

| Type of County | Number of Counties | Number of Counties with Projects | Proportion of Counties with Projects |
|---|---|---|---|
| Metropolitan | 6 | 6 | 1.00 |
| Urban | 17 | 8 | .47 |
| Adjacent | 18 | 4 | .22 |
| Semi-Rural | 29 | 14 | .48 |
| Rural | 30 | 8 | .27 |

Table 26: Number of Counties, Number of Projects, and Average Number of Projects with Ongoing Relationships, Per County. Counties are Grouped Along an Urban-Rural Continuum.

| Type of County | Number of Counties | Number of Projects | Average Number of Projects per County |
|---|---|---|---|
| Metropolitan | 6 | 20 | 3.33 |
| Urban | 17 | 15 | .88 |

Table 26: Number of Counties, Number of Projects, and Average Number of Projects with Ongoing Relationships, Per County. Counties are Grouped Along an Urban-Rural Continuum, Continued.

| Type of County | Number of Counties | Number of Projects | Average Number of Projects per County |
|---|---|---|---|
| Adjacent | 18 | 5 | .28 |
| Semi-Rural | 29 | 16 | .55 |
| Rural | 30 | 8 | .27 |

The group of metropolitan counties is the only one in which not only is there no county without a project, but the average number of projects per county is greater than 1.00. In fact, here it is 3.33 projects per county.

## Distribution of Projects by Service Area

Each service area has some counties with projects that establish ongoing relationships. Area IV which has the greatest proportion of adjacent counties has the fewest counties with projects. Service Areas I, V, and VI, which have the largest proportions of rural and semi-rural counties, are next in line.

Area II, which is largely urban, and III which is about half urban and adjacent and half rural, have the greatest proportions of counties with projects. (See Table 27.)

Table 27: Number of Counties and Number of Counties with Projects with Ongoing Relationships, and Proportion of Counties with Projects.

| Service Area | Number of Counties | Number of Counties with Projects | Proportion of Counties with Projects |
|---|---|---|---|
| I | 17 | 7 | .41 |
| II | 12 | 6 | .50 |
| III | 16 | 9 | .56 |
| IV | 12 | 3 | .25 |
| V | 17 | 7 | .41 |
| VI | 26 | 8 | .31 |

## Projects and the Types of Counties in Which They are Active

The majority of projects, such as the Cancer Information Service, the Diabetes Consultation and Education Service, Education and Research in Community Medicine, Continuation Education in Dentistry, Continuation Education for Physical Therapists, have concentrated project activities in the metropolitan areas.

Approximately half of the hospitals affiliated with the Cancer Registry are in semi-rural areas, while the majority of the local stroke programs are in rural and semi-rural areas. (See Table 28.)

The reasons for project activities in urban areas are varied. The Cancer Information Service needs a large hospital, most of which are found in urban or metropolitan areas, for its Tumor Telephone Board. For the Diabetes project, which has urged each of several hospitals to support a Diabetes Teaching Nurse, and urban focus is sensible. Only a large hospital, most likely in an urban area, can support very specialized staff. The Education and Research in Community Medicine project likewise requires the cooperation of a large hospital, one with a large number of specialists and one which might offer teaching opportunities. The majority of physical therapists are also in urban areas.

The Dentistry project in the future may try its program in smaller communities having found that the average dentist in densely populated areas, in which dental specialists also reside and work, leaves hospital dentistry to the specialist.

Table 28: Projects and the Types of Counties in Which They Have Set up On-going Relationships.

| Projects | Metro | Urban | Adjacent | Semi-Rural | Rural | Total |
|---|---|---|---|---|---|---|
| Central Cancer Registry | 4 | 3 | 0 | 6 | 0 | 13 |
| Cancer Information Service | 1 | 1 | 0 | 0 | 0 | 2 |
| Diabetes Consultation and Education Service | 5 | 2 | 1 | 0 | 1 | 9 |
| Education and Research in Community Medicine | 3 | 2 | 0 | 1 | 0 | 6 |
| Continuation Education in Dentistry | 1 | 4 | 1 | 0 | 0 | 6 |
| Continuation Education for Physical Therapists | 6 | 0 | 1 | 0 | 2 | 9 |
| Comprehensive Stroke Program | 0 | 3 | 2 | 9 | 5 | 19 |

## Summary

Certain conclusions concerning the nature of NCRMP may be made following review of the projects it has supported.

A planned program has not emerged. Within each of the categorical areas there is little connection among the projects. In the area of cancer alone have such connections begun to be established. Nor are there connections among the categorical areas of emphasis. No cumulative reorganization of activities has occured; each project sets the terms of its own outreach and institutional affiliations. Outreach itself is haphazard and limited. The extension of RMP supported activities into the geographical areas of greatest need has hardly begun. Rather, RMP has tended to add resources to settings in which these were already relatively concentrated. Its operations have largely shored up conventional activities, rather than developing innovations. In a real sense, the future of NCRMP is still before it.

Nevertheless, the review of activities documents the involvement of large numbers of health care personnel and institutions in an expanded program of education, consultation and service which must have improved materially the quality of health care available to the people of North Carolina.

# APPENDIX I

## Cancer Information Service
Project Director: Dr. James A. Bryan II

The statistics used are a combination of those kept by Duke from September 1969 through March 1970 and ours from April 1970 through January 1971. All statistics are based on the N. C. physicians who had called in during that period.

As the Regional Medical Program is no longer funding the Cancer Information Service, Duke alone has answered questions concerning their Cancer Telephone Conferences. A similar project is being set up between Bowman-Gray and Asheville.

1. Document the number of calls received at each medical school, where the callers are from, the medical specialty of the consultant.

### COMBINED STATISTICS BOWMAN-GRAY DUKE UNC (CHAPEL HILL) SEPT. 1969---JAN. 1971

| Number of Calls | 295 |
|---|---|

| Callers Specialty | |
|---|---|
| Gynecology | 68 |
| Medicine | 93 |
| General Practice | 77 |
| General Surgery | 104 |
| Ortho | 1 |
| Uro | 1 |
| ENT | 7 |
| Pathology | 1 |
| Radiotherapy | 5 |
| Dentistry | 9 |
| Social Service | 1 |

| Consultants Specialty | |
|---|---|
| Gynecology | 89 |
| Medicine | 161 |
| Pediatrics | 5 |
| General Surgery | 66 |
| Ortho | 6 |
| Uro | 2 |
| Neuro | 2 |
| Plastic | 4 |
| Thoracic | 5 |
| ENT | 5 |
| Radiotherapy | 9 |
| Dentistry | 4 |
| Social Service | 1 |

| Counties Served | |
|---|---|
| Alamance | 5 |
| Ashe | 6 |
| Avery | 4 |
| Beaufort | 4 |
| Buncombe | 20 |
| Burke | 1 |
| Brunswick | 2 |
| Cabarrus | 9 |
| Caldwell | 3 |
| Catawba | 14 |
| Chatham | 5 |
| Cleveland | 15 |
| Colombus | 7 |
| Craven | 3 |
| Cumberland | 14 |
| Davidson | 9 |
| Duplin | 3 |
| Durham | 1 |
| Edgecombe | 1 |
| Forsyth | 6 |
| Gaston | 9 |
| Granville | 1 |
| Guilford | 3 |
| Halifax | 4 |
| Haywood | 3 |
| Henderson | 4 |
| Hertford | 5 |
| Iredell | 8 |
| Johnston | 7 |
| Lee | 6 |
| Lenoir | 3 |
| Mecklenberg | 19 |
| Mitchell | 2 |
| Moore | 1 |
| Nash | 13 |
| New Hanover | 2 |
| Onslow | 1 |
| Orange | 3 |
| Pamlico | 2 |
| Pitt | 4 |
| Polk | 4 |
| Randolph | 2 |
| Richmond | 2 |
| Robeson | 1 |
| Rockingham | 2 |
| Rowan | 24 |
| Rutherford | 10 |
| Sampson | 3 |
| Scotland | 5 |
| Stanley | 5 |
| Surrey | 1 |
| Transylvania | 6 |
| Vance | 1 |
| Wake | 11 |
| Wayne | 13 |
| Wilson | 3 |

| Out of State Calls | |
|---|---|
| Kingsport, Tenn. | |
| Johnson City, Tenn. | |
| Newport News, Va. | |
| Roanoke, Va. | |
| So. Boston Va. | |
| Unidentified | 3 |

2. (A) What proportion of the callers indicated that the information was helpful?
   (B) Did these vary by region, specialty, or urban/rural characteristics of the locality?
   (C) What proportion of the callers stated the management of their patients changed as a result of the phone consultation?
   (D) Did these vary by region , specialty, by urban/rural characteristics of the locality?
   (E) For what proportion of the patients do you think the calls prevented a referral to a medical center?

   (A) 78% of completed replies indicated the calls were helpful.
   (B) These varied by region.
   (C) 74% of completed replies stated the management changed.
   (D) These varied by region.
   (E) 72% of completed replies stated local disposition.
      Direct care= 185
      Local consultant= 31
      Medical Center= 81

3. (A) How many bi-weekly phone conferences have been held between Duke and New Hanover Community Hospital?
   (B) How many attended the conferences?
   (C) What was the distribution of house staff and senior staff?
   (D) What proportion of the staff physicians attended one or more conferences?
   (E) Do physicians at Duke, UNC, Bowman Gray and in Wilmington indicate approval of the project?

   (A) Duke's pilot program: 19 calls were made between Duke and New Hanover Memorial Hospital for Telephone Tumor Board.
   (B) 20 attended conferences.
   (C) Senior staff 20, House staff 3.
   (D) Attendance 100%
   (E) Duke and New Hanover physicians who actively participated in the pilot program are enthusiastic about it. Both Bowman-Gray and UNC look forward to establishing similar programs this year.

4. What other hospitals have expressed interest in phone conferences? What do you believe to be the necessary criteria for participation by hospitals in conferences? (bed size, staff composition, etc.)

   Bowman-Gray is planning to establish a Telephone Tumor Board (Cancer Conference) with Mission Memorial Hospital in Asheboro. Lumberton's South Eastern General Hospital is interested in such a project with UNC.

Dr. Robert Cooper, Director of Cancer Information Service at Bowman-Gray replys: A necessary criterion for hospitals to participate in conferences would be an interest of the local area in the treatment of neoplastic diseases. The most likely would require a hematologist or oncologist in the area to select cases of interest for presentation with the University Center. The necessary criterion for the consulting hospital would be that it be able to provide pathological, radiological, hematological, and oncological consultation. In addition, it would be necessary to have surgeons with particular interest in various phases of oncology. A consulting hospital would, of necessity have to be a university center. However, this is one method by which adequate care can be given to the patient without his coming to the university center. In addition, it would add support to the physician who is actively practicing in a community setting. I am frequently asked to speak at various county medical societies. It is interesting the large number of questions asked concerning neoplastic diseases at these discussions. I feel that there is a real need for more adequate communication between the university center oncologist and the practitioner. I think that this medium will provide a means for an exchange of information that hopefully will be helpful for the patient.

Dr. Wm. Creasman, Director at Duke: The criteria should be in Staff composition.

Dr. James A. Bryan II, Director at UNC: My impression in talking to community hospitals is that without House Staff (which probably eliminates hospitals of 400 beds or less) it would be a wasted effort to set up telephone tumor conferences.

5. (A) What on-going formal relationships has your project effected since its RMP funding?
   (B) Which of these relationships that your project has initiated is likely to continue after the life of the Regional Medical Program?

Bowman-Gray: The only relationship established with the telephone answering service has been between referring physicians. Many of our physicians have used this service for referral of patients to us at the Center. In addition, it has brought many of our practitioners in close communication with our office in regards to the care of their patients. I feel that these relationships will persist once the Cancer Information is discontinued.

Duke: On-going relationship between the Medical Schools and the local hospitals.

UNC: Our formal relationships with other RMP projects have been through the evolution of the Comprehensive Cancer plan but particularly with the Tumor Registry. Each year approximately 2 local Medical Societies called on the CIS Directors for a cancer "talk". There have been no formal relationships established between Medical Schools and State Agencies because of the CIS; or between Medical Schools and local agencies and institutions except the informal one with the local American Cancer Society. Formal on-going relationships have been established between Duke and Wilmington, and between Bowman-Gray and Asheville. The inter-hospital relationships are likely to continue.

6. (A) If RMP were to cease funding your project, what would it leave behind? For example educated people (how many and to what extent), on-going relationships between institutions, equipment?
   (B) What services would have to be continued to maintain the state of affairs your project has brought about. If planning is underway for the support of these efforts, please outline briefly.

   (A) Dr. Cooper: If the RMP would cease to fund this project, it would leave behind a secretary who is well trained in collection and organization of neoplastic information. This secretary has been instrumental in developing excellent relationships between practitioners on the firing line in the active management of patients with neoplastic diseases and the University Center.
   (B) We are presently establishing communications with the Mission Memorial Hospital in Asheville for establishment of conferences similar to the Duke-New Hanover situation. Personnel presently involved in the CIS will be used in formulating and organizing this program.
   (A) Dr. Creasman: Lines of communication between Medical Center and local hospitals.
   (B) Some one to fund it.
   (A) Dr. Bryan: Since RMP will cease funding our project it will leave behind a group of "cancer specialists" in each Medical School who have interacted formally for the first time. The relationships between the hospitals mentioned above will continue and the cancer library materials bought in each place will be available. In addition, x-ray duplicators will be left behind at Wilmington and Asheville.

7. Discuss any other important project objectives not asked about thus far.

   Dr. Creasman commented that a telephone answering service rarely can succeed and here where most physicians have graduated from one of the Medical Schools they will very likely call a physician consultant directly. He said that the cancer program funded by RMP at Houston University's M.D. Anderson Hospital has been so successful that it has been recently joined by Oklahoma and Louisiana. Wisconsin has started a program which not only furnishes recorded information on cancer problems but those in other fields such as heart etc. He feels with due notification to the physicians in this State we could develop a similar program. It would be effective in the continuing education of the physician and medical student and definitely a great time saver.
   Dr. Bryan: the project objectives developing in the medical population in the State and a realization that there are resources at each of the Medical Centers available to answer their questions, probably has been achieved. The creation of a communications system to answer these questions efficiently has not been achieved in that problem-oriented physicians direct themselves to the specialty area best able to answer their patients problems, that is, it it is an ovarian tumor, the gynecology service will be directly consulted.

## Cancer Registry
### Project Director, James F. Newsome, M.D.

1. (A) At which institutions has the Central Cancer Registry been established?
   (B) On how many cancer patients at each hospital has information been collected?

   (A) VA Hospital, Durham; N. C. Memorial Hospital, Chapel Hill; N. C. Baptist, Winstion-Salem; Watts Hospital, Durham; Southeastern General Hospital; New Hanover Memorial Hospital; Duke Hospital, Durham; Craven County Memorial Hospital; Charlotte Memorial Hospital; Catawba Hospital; Cabarras Hospital; Carteret General Hospital; Cleveland County Memorial Hospital; Moore Memorial Hospital; Onslow Memorial Hospital; Pitt County Memorial Hospital; Richmond Memorial Hospital; Valdese General Hospital; Wake County Memorial Hospital.

   (B) Impossible to answer now. All this information has not been put into the computer.

2. Please enclose copies of any reports on particular aspects of cancer from the registry.

   We have yet to produce more than pilot reports on a few isolated aspects of cancer. We have encountered a rather major obstacle which only this week has been overcome. As you recall originally we started out by using the computer facilities at Duke. When transferred to the State Board of Health, programs had to be rewritten. The data in the Duke computer system (Metatran) had to be taken out and transferred to the State Board of Health. For some reason there has been considerable delay in getting these data from Duke and only this week does Mr. Vitaglione tell me that this has been completed. We anticipate full report on 1968 figures within 3 weeks and the 1969 figures within 6 weeks.

3. Please describe the activities of the advisory committee to date. What are the mechanisms through which the committee's decisions will be received and acted on by the Board of Health?

   The advisory committee to date has been concerned with ironing out the new data abstract sheets, the review and approval of the appropriate interpretations as outlined in the Registry manual, and the appropriate help to Mr. Vitaglione, the director of the program at the State Board of Health, bring together and interpret the various aspects of the Central Tumor Registry. Dr. Theodore Scurletis, Dr. Isa Grant, and Mr. Vitaglione, all of the State Board of Health are members of the advisory committee and meet with the committee at each session to not only share in the decisions but to notify the State Board of Health of the decisions made.

4. What other activities do you feel that RMP should undertake or underwrite in the area of cancer registry development and amintenance?

   At this point in time probably none in the way of financial support. The various members of the Regional Medical Program, however, could serve a very useful service in making the Central Registry known to various physicians and hospital directors throughout the state.

5. (A) What on-going formal relationships has your project effected since its RMP funding?
(B) What on-going formal relationships has your project effected between medical schools and local hospitals?
(C) What on-going formal relationships has your project effected between medical schools and state agencies?

(A) We have no formal relationship but would anticipate such with the Tumor Tissue Registry as proposed by Dr. Lund. The mechanics whereby these two programs will function jointly has yet to be worked out. It seems highly desirable, however, that the education aspects of both programs would be a natural collaboration for the goal of each, namely the improvement in cancer education by the practicing physicians in the state.

(B) There is no formal relationship in this area. The milieu in which the Registry was founded also gave birth to the concept of Tumor Telephone Board, the Cancer Information Service, and a more frequent request for consultations from local physicians and local hospitals with various medi schools.

(C) The formal relationship with the State Board of Health has been explained and the relationship between this agency and medical school has become more formal in the extent to which members of the medical school particip in the Central Registry as do representatives of other hospitals.

6. Which of these relationships that your project has initiated will continu after the life of the Regional Medical Program?

Assuming the funding of the Central Tumor Registry by the General Assembl is a line item in the budget for the State Board of Health, the Registry as such could continue indefinitely. The extent of continued funding and indeed a possible increase in funding will in large measure depend upon the effectiveness of the Central Tumor Registry which at this point in time I see is a major function of the advisory committee.

7. (A) If RMP were to cease funding your project, what would it leave behind?
(B) What services would have to be continued to maintain the state of affairs your project has brought about?

(A) (See the answer to question 6 above.) In addition I think the renewed interest, stimulation, and indeed education of people participating in the Central Tumor Registry would be left behind, and I believe the interest of such individuals would insure continued operation of the Centra Tumor Registry after the RMP demise.

(B) (See above.) As eluded to above, I am sure that the innate and vested interest in the Central Tumor Registry is such with the demise of RMP, the Central Tumor Registry would continue.

8. Discuss any other important project activities not asked about thus far.

The major initial thrust of the Central Tumor Registry is that of pure clinical orientation, of stimulating interest of the practicing physician in malignant disease and offering the method whereby questions concerning clinical data can be answered. Over and above this, it has been an underlying and continuing interest in most members of the advisory committee that the Registry serve as a gathering mechanism for data to be utilized for educational purposes in statistics, demography, epidemiology and the socioeconomic aspects of malignant disease. In addition, referral patterns, diagnostic and treatment delays, identification of appropriate diagnostic facilities and treatment facilities as well as the definition of other items that impede appropriate care would hopefully be brought to light by the Central Registry.

9. Has your present system of data collection allowed you to answer these questions relatively easily?

Our present system of data collection should allow us to answer these questions easily. In looking at the preliminary reports, the answer is an emphatic yes. It is anticipated, however, that a periodic review of the output of the Registry will indicate needs to change the system of data collection of indeed the type of data being collected. This is the second major responsibility of the advisory committee.

## Comprehensive Stroke Program
### Project Director: B. Lionel Truscott, M.D.

1. (A) How many local stroke programs have been developed? Where? Exactly what does a local stroke program consist of?

   (B) Which programs seem to function better than others? Why do some function better and some worse; is it something about the particular personalities and interests of the participants or something about the environment, such as size of hospital, rural/urban aspects of the community, etc.? If your answers here are also applicable below refer back to this part, but be sure to answer each question.

(A) Local stroke programs have been developed in 19 counties (total populatio 915,000), and involved 22 hospitals and 8 nursing homes. (See attached map).

A community stroke program is based on the coordination of all health resources, and on the training and more effective use of existing health manpower. The organization structure consists of a local committee with four subcommittees:

Local Stroke Program Committee: The members represent all deliverers of health care and serve as a supervisory body.

Subcommittees - (1) Stroke Team: hospital physician, nurse, and physical therapist; public health and nursing home nurse; and community physical therapist. This team is a local consultant team. (2) Discharge Planning: consists of the physician of the patient under consideration, stroke nurse and physical therapist, public health nurse, nursing home nurse and social services representative (if applicable), member of patient's family, and other allied personnel as available and indicated. (3) Area Resources Development: On the basis of a community profile (prepared by the Comprehensive Stroke Program staff), and on local experience, these lay members identify needs and methods to correct them. (4) Public Education: Lay members, with staff advice, publicize the local program, preventive measures, and stroke-related problems.

Organizational, medical, nursing, and rehabilitative guidelines are followed in organizing the local program and conducting a 4-day Basic Training Course for the Stroke team and In-service Education sessions for professional and allied health personnel of the community.

(B) Two major factors contribute to the weakness of local programs: (1) the reluctance of physicians to complete a clinical evaluation form on their patient (this takes about 2-3 minutes), and (2) the reluctance of others to change their pattern of treatment until they are sure that the new method is better and will not take time (since they hesitate to change, they also do not gain the experience necessary to test the new patterns of care). In only one county (Eastern) were the objections of "federalis voiced. The hospital size influences the program only in this respect: the larger hospitals have a high percent of internists some of whom do not wish to be told how to treat the stroke patient (these are the 150 plus bed hospitals); smaller hospitals (50 beds or less) have few physicians (all generalists) who hesitate to become involved in a new venture which may take time (as in all cases, however, the final decision depends on the degree of motivation of the doctor).

2. Since the following are suggested by you in your reports as influences on the course of patient care and as being amenable to change through your project, what information do you have on their change, i.e.
   a. physicians' specific interest and ability in management;
   b. physicians' attitudes toward successful treatment;
   c. patients' attitudes;
   d. availability of medical care resources;
   e. awareness of resources;
   f. early discharge planning;
   g. referral patterns;
   h. follow-up mechanisms;
   i. training of families of patients and volunteers by paramedical personnel.

   Be explicit in answering the above questions. Try also to describe and to give reasons for the types of persons and hospitals which respond best and worst to your activities. It will be important that you know which types of physicians (urban/rural, young/old, etc.), patients (young/old, rich/poor, those with families/without, etc.), and hospitals (large/small, etc.) changed most and least, and why they did so, as a result of your program. This will be an aid to developing new problems, objectives, and activities for the next three years.

In addition to the changes in patterns of patient care illustrated in the accompanying graphs, specific answers to this question are:

(a) and (b): The interest, ability and attitude of the physician has changed as he has initiated treatment of his patient according to the guidelines; he has realized the patient receives better care, has fewer complications, a shorter hospital stay. Physicians who declined to participate initally have begun to participate as they note the better pattern of care in patients treated according to the guidelines.

(c) The patients and their families realize that the patient is receiving better care, personnel show increased interest even after discharge, and the family is less reluctant to receive the patient again in his home.

(d) The public health nurse, who conducts post-hospital follow-up, is receiving referrals for the first time. With the State Board of Health Physical Therapy consultant the physicians now use these resources for follow-up care of their patients.

(e) Awareness of resources is achieved through the Program staff and the local subcommittee (See Area Resources Development above.)

(f) Early discharge planning: Introduced for the first time in participating hospitals, this function has resulted in shorter stay and has, for the first time, involved the public health and nursing home nurse prior to discharge of the patient.

(g) No change has, or should, be made in referral patterns except as requested by the physician. Consultations and referrals to neurodiagnostic centers have increased as diagnosis and differential diagnosis has improved in the community.

(h) Each patient who has been managed according to all aspects of the guidelines, is followed and treated by the public health nurse who forwar a report ever 3 months to the Stroke Program office; at present quality of survivorship data are available on over 100 patients followed for 2-9 months.

(i) The patient and family, in most cases, are taught how to conduct passive exercises, transfer and ambulation; this education, conducted while the patient is still in the hospital, has facilitated discharge (this information is also obtained from a recent questionnaire sent to all members of stroke teams who have been functioning for 6-18 months).

Response of facilities and personnel:

(1) A greater number of younger physicians than of older physicians (55-plus) are receptive and cooperative.

(2) Urban vs. rural facilities or population do not affect the success of the program except in so far as the region may have a large or small hospital, and few or many specialists.

(3) The better programs tend to be in 100-250 bed hospitals (there are, of course, exceptions). As noted in 1 B this is usually due to the reluctance of the "small town doctor" to alter his time-honored method, and of the internist to acknowledge that the new patterns of care are better than his method of management.

While a hard and fast rule connot be laid down, it can be said that the greatest changes may be noted among the younger physicians, and the average community hospital (100-250 beds). We are unable to correlate differences in changing patterns with age of the patient, financial status, or population density. It is conceivable that further expansion of the program may bring out differences between Mountain, Piedmont, and Coastal regions.

3. To whom have guidelines for treatment been furnished? Do you have indications that guidelines have had an impact on the type of care given stroke patients? Do you have information on which types of persons (i.e., M.D., Nurse, P.T.'s) consult the guidelines for instruction.

Guidelines: All members of stroke teams receive these, and they are distributed on all pertinent wards of participating hospitals. The physicians must consult them to determine whether his patient is to be treated according to the "acute", "subacute", or rehabilitative" phase of the guidelines. The nurses consult them repeatedly to ensure they they are carrying out the physician's orders. The Stroke Program office also determines the use of the guidelines in any particular case by checking the hospitalization form that is received on each patient.

Impact on Care: This is illustrated in the accompanying graphs. At present we are also about to computerize the quality of survivorship data from follow-up report received every 3 months on each patient who has been placed on follow-up care by his physician.

4. (A) a. Document where (hospital, city, etc.) training courses have been given, how many hours of instruction were given in each course, how many M.D.'s, R.N.'s, P.T.'s, etc. attended each one.

b. Is anything significant about which types of people came from which areas or hospitals? (For example, R.N.'s from one hospital and P.T.'s from another.) Explain.

c. Do you have information on whether they made use of the things taught in the training course? If so, summarize this.

(B) a. Document where in-service education programs have been developed, how many hours of instruction were given in each hospital, how many health professionals have attended the sessions.

(A) a. Basic Training Course for Stroke Teams:

Four courses have been conducted since June, 1969

| | Hours | Total number of: | | | | |
|---|---|---|---|---|---|---|
| | | M.D. | R.N. | P.H.N. | P.T. | L.P.N./Aide/Other |
| Winston-Salem | 32/course | 22 | 52 | 31 | 15 | 17 |

Total participants (Basic Training Course): 137.

b. The type of person attending was determined according to our organization guidelines (see 1 (A) Stroke Team). Our philosophy is that all deliveries of health care in the same hospital should be trained through this course and In-service Education.

c. Use of knowledge gained was applied in most cases as indicated by data from hospitalization forms (see graphs), the questionnaire mentioned in 2 (i), and follow-up forms which are now being keypunched.

(B) a. In-Service Education: Conducted in 22 hospitals (including personnel from 8 nursing homes).

| Hospital/Nursing Home | | Total Number of: | | | | |
|---|---|---|---|---|---|---|
| | | M.D. | R.N. | P.H.N. | P.T. | L.P.N./Aides/Other |
| 22 | 8 | 157 | 479 | 119 | 17 | 444 |

Total participants in In-Service Education (4-10 hours course): 1,216

Grand total (Basic Training and In-Service Education): 1,353.

5. a. What illness information service is provided?
b. How often is it used?
c. By whom?

Illness information service: I am not sure I understand this. We furnish the physician and nurse with materials on diagnosis, differential diagnosis, and the stroke problem. Films and film strips are loaned for continuing education.

6. a. What consultative services are provided by your project?
b. Who used the service?
c. How often?

Consultations: We are contacted by physicians and nurses for consultatio This we are able to furnish because our staff consists of a neurologist, a nurse, and a physical therapist. Although more consultations are requested as communities gain experience, this is not a frequent service (even in view of the availability of medical center consultants). I do n know why more consultations are not requested (they average about one a week for all disciplines).

7. (A) What on-going, formal relationships has your project effected since its RMP funding?
   (B) Which of these relationships that your project has initiated will continu after the life of the Regional Medical Program?

   (A) No formal relationships with other Regional Medical Program projects have been established, not only because of the different disease category, but because our organization and philosophy include: involvement at the community level, participation by all disciplines in health care delivery and services rendered to the community (consultative, educational, evalua tive) instead of direct funding. It is possible that some relationship will be established between heart screening and stroke screening if both are funded.

   Medical school relationship has been established with local hospitals to facilitate direct phone consultation. This was an agreement sponsored by the Stroke Program. If a community Stroke program wishes medical center faculty member to address a Medical Society meeting on diagnosis and trea ment of stroke, we will defray his expenses.

   The following list summarized the formal relationships established in all community stroke programs. All individuals participate according to our organizational guidelines, and form an integeral part of the Program. Th agencies with whom formal relationships have been established include:

   1. 22 hospitals and 8 nursing homes
   2. 19 Public Health Departments (including one in Virginia)
   3. 19 Social Service Departments
   4. The North Carolina State Board of Health (Physical Therapy, Chronic Disease, and Multiphasic Screening Clinic Sections)

   (B) All of these relationships will continue after the life of Regional Medica Program since they are voluntary agreements in establishing a community stroke program; they do not depend on any funding (personnel or equipment by Regional Medical Program.

8. (A) If RMP were to cease funding your project, what would it leave behind? For example, educated people (how many and to what extent), on-going relationships between institutions, equipment?
   (B) What services would have to be continued to maintain the state of affairs your project has brought about. If planning is underway for the support o these efforts, please outline briefly.

(A) At this time, if Regional Medical Program ceased funding the stroke project, it would leave behind:

1. Community stroke programs involving 22 hospitals, 8 nursing homes, and 19 health departments in 19 counties (915,000 population)

2. The following personnel educated and coordinated to provide better stroke care:

| M.D. | R.N. | P.H.N. | P.T. | L.P.N./Aides/Other |
|---|---|---|---|---|
| 179 | 531 | 150 | 32 | 461 |

Total = 1,353

(B) To maintain the state of affairs brought about by the Project, it would be necessary to have a Core Staff which would (a) continue to provide consultative service, (b) periodically conduct in-service education (for refresher courses, and education of new personnel joining the local hospital), and (c) maintain the enthusiasm and cooperation at the local level (it is quite apparent that this spirit slowly dies without visits which remind the personnel that an outside agency is genuinely interested in their program).

We have requested funding for the Core Staff and office personnel (Salary and travel). To provide the community with evaluation we have requested funding for continuation of local Executive Secretaries, Evaluation Consultations and computer time. If new programs are to be started, funding for Basic Training and In-Service Education is needed.

9. Discuss any other important project objectives not asked about thus far.

Our future plans include Stroke Prevention and Surveillance through local screening clinics. A target population will form the bulk of those screened: children (over 35 years of age) of patients hospitalized in our stroke program hospitals, The names and addresses of these children have been included in our hospitalization forms, starting in April 1970. We have also made tentative plans to include Stroke screening in the Multiphasic Screening Clinics of the State Board of Health. Finally, several large industrial firms have been contacted for similar cooperative agreements.

10. Has your present system of data collection allowed you to answer these questions relatively easily. If not, how do you plan to change your system of data collection in the future so that your activities will be more effectively documented.

All of these questions could be answered easily because of the evaluation system and data collection developed before we started the first community stroke program.

We have made minor revisions of hospitalization and follow-up forms as we have gained experience. These changes have been largely directed at obtaining additional data which we believed would be essential.

Since the start of the Program we have obtained the constant flow of data necessary to determine: (a) the admission and discharge status of the patient, (b) the pattern of laboratory evaluation, (c) the pattern of care, (d) the disposition on discharge (home, nursing home) and (e) the quality of survivorship at 3-,6-,9-, etc. months after discharge

As of March 1, 1971 we have information on changes in pattern of care and quality of survivorship on the following:

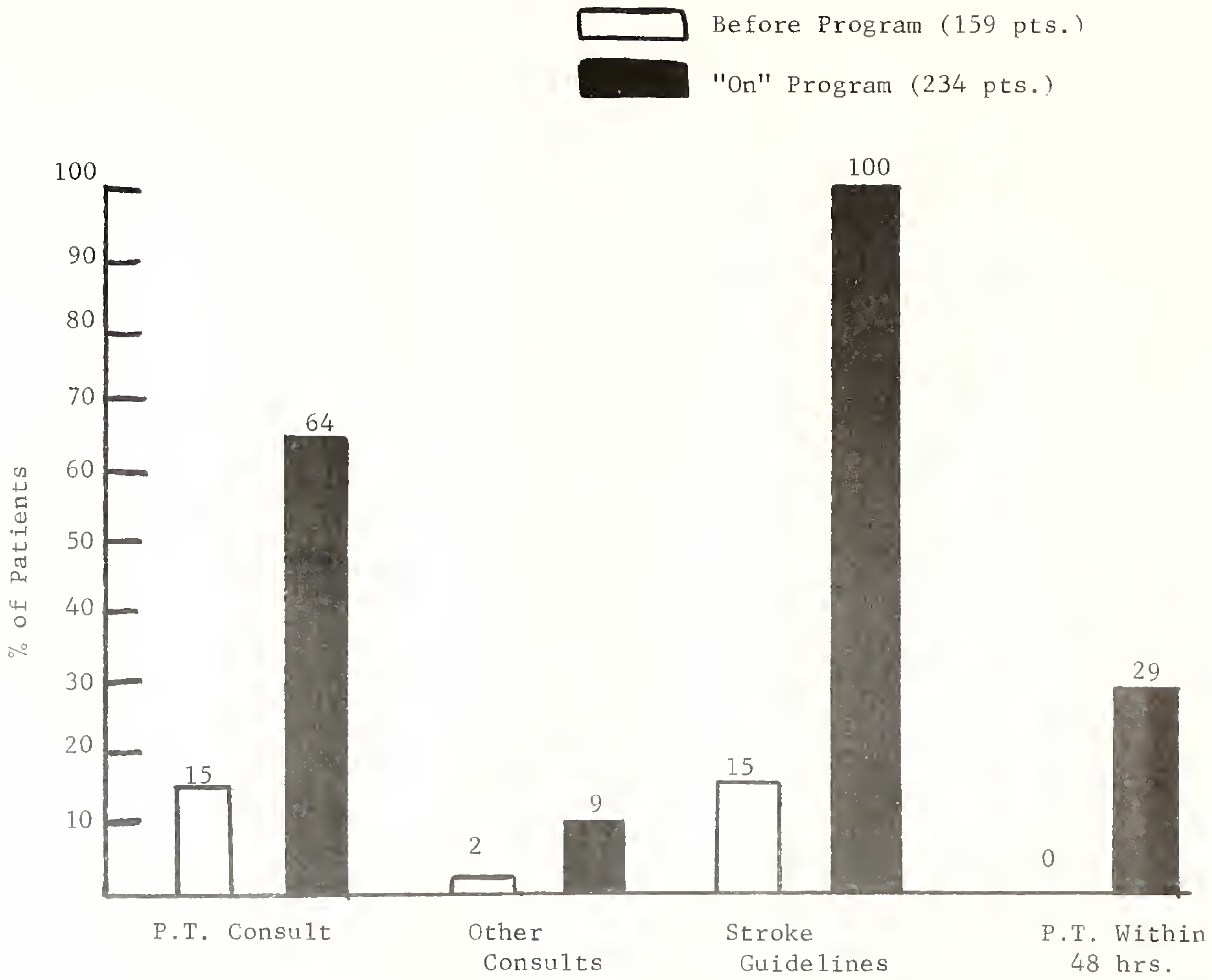
160 patients before the start of the program

567 patients after the start of the program

a). Not treated according to our Guidelines of Management: 260

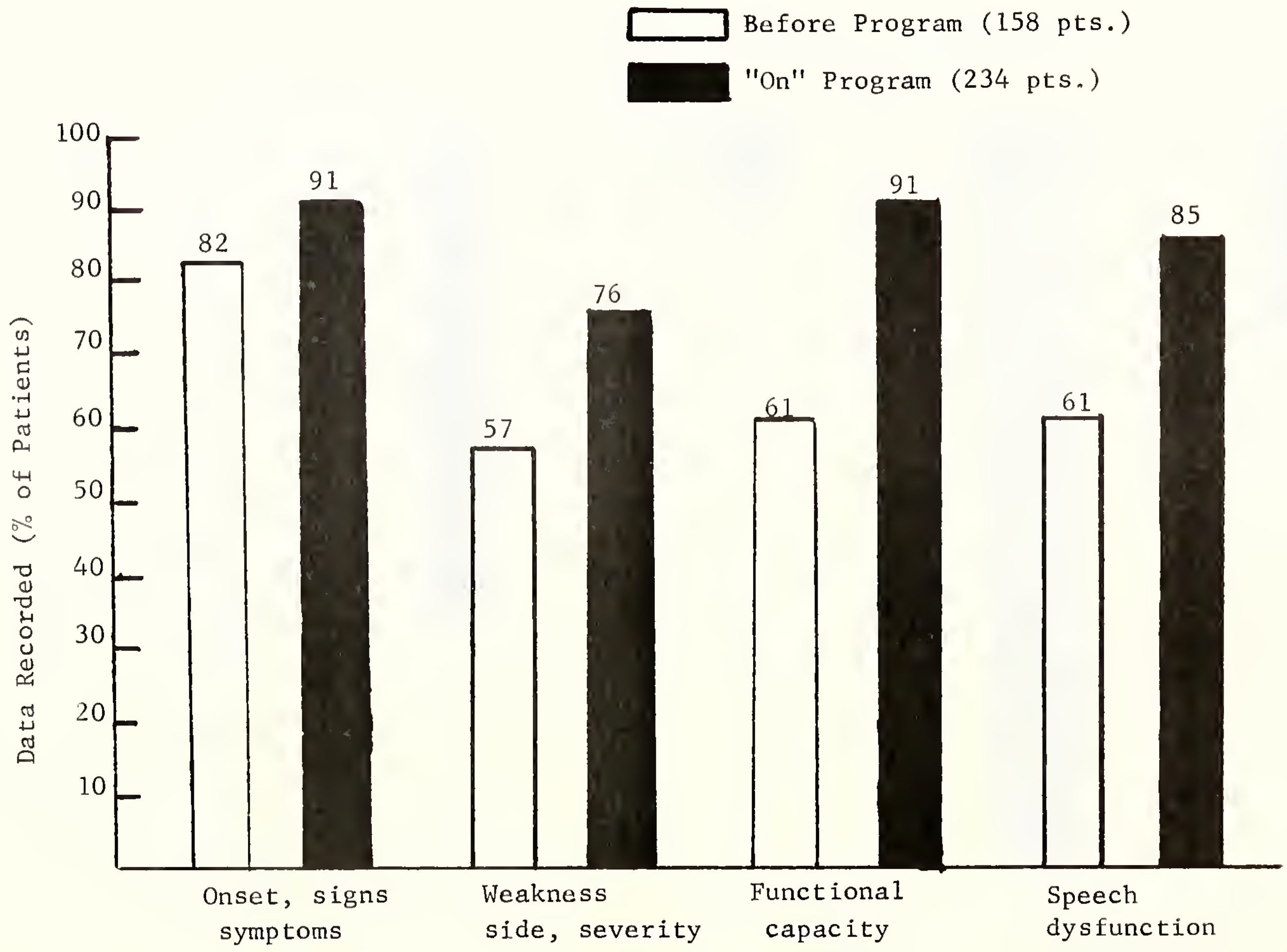
b). Treated according to our Guidelines of Management: 307

# IN-HOSPITAL TREATMENT



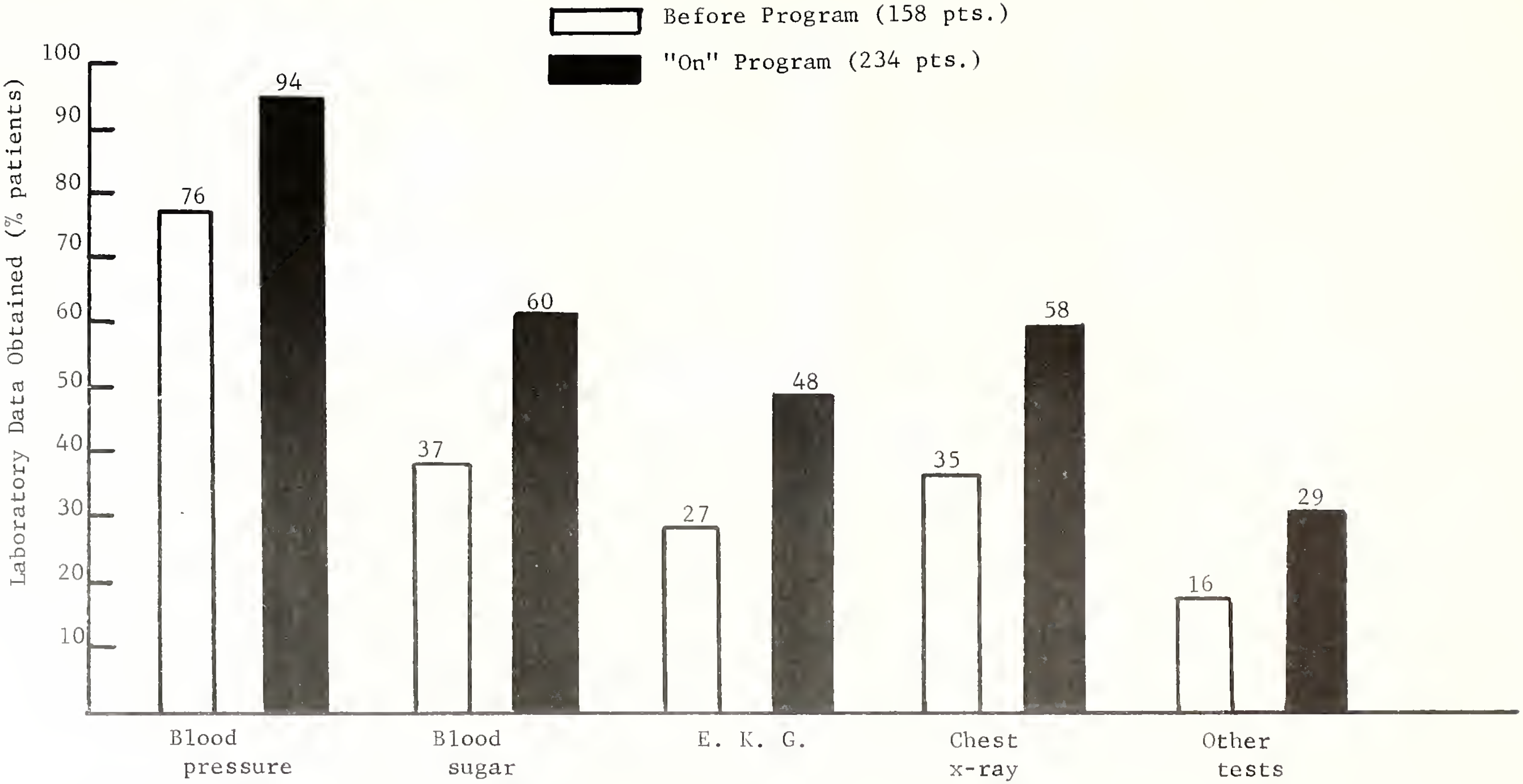
## PATIENT EVALUATION

### a. Clinical

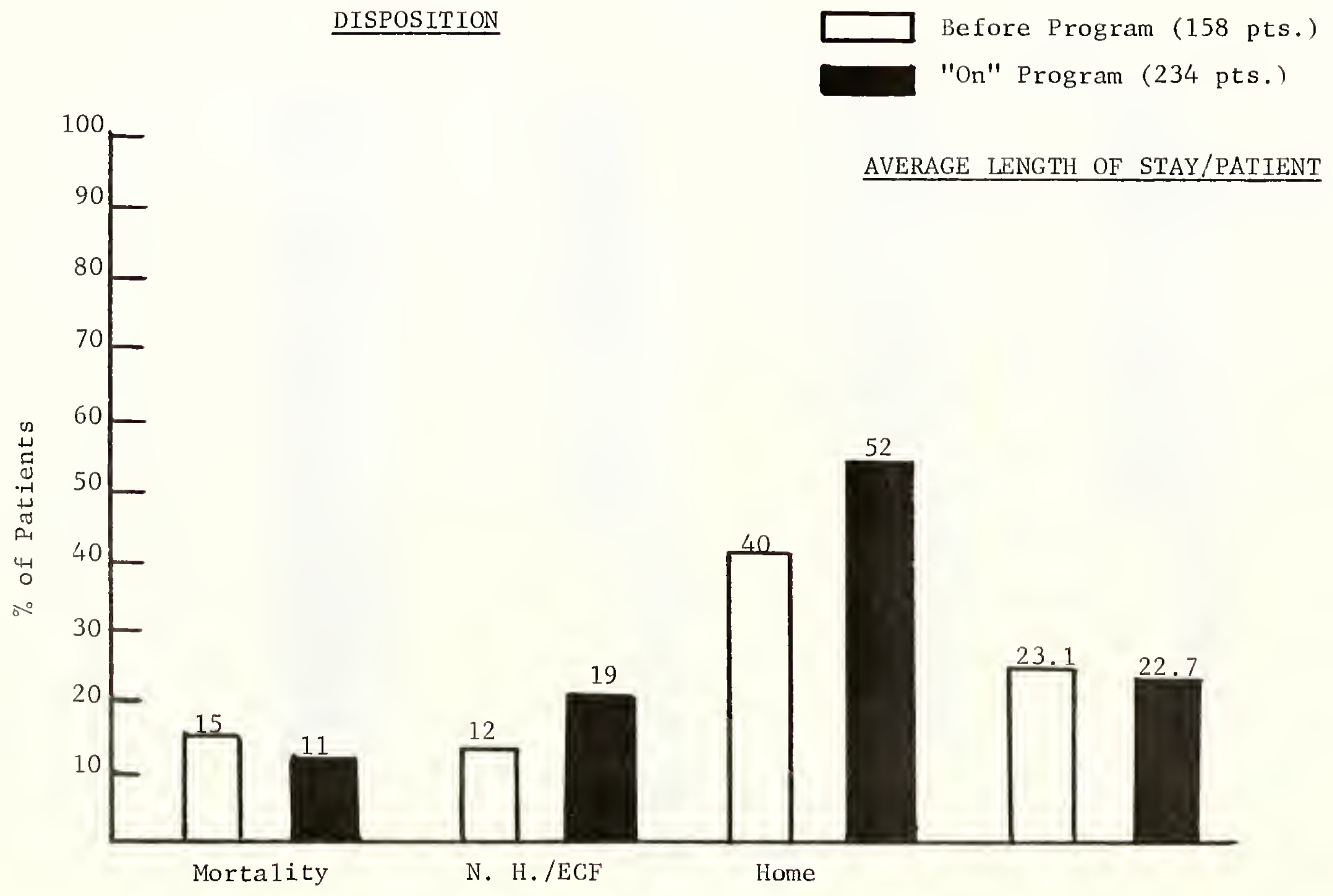


## PATIENT EVALUATION

### b. Laboratory evaluation



## AT DISCHARGE

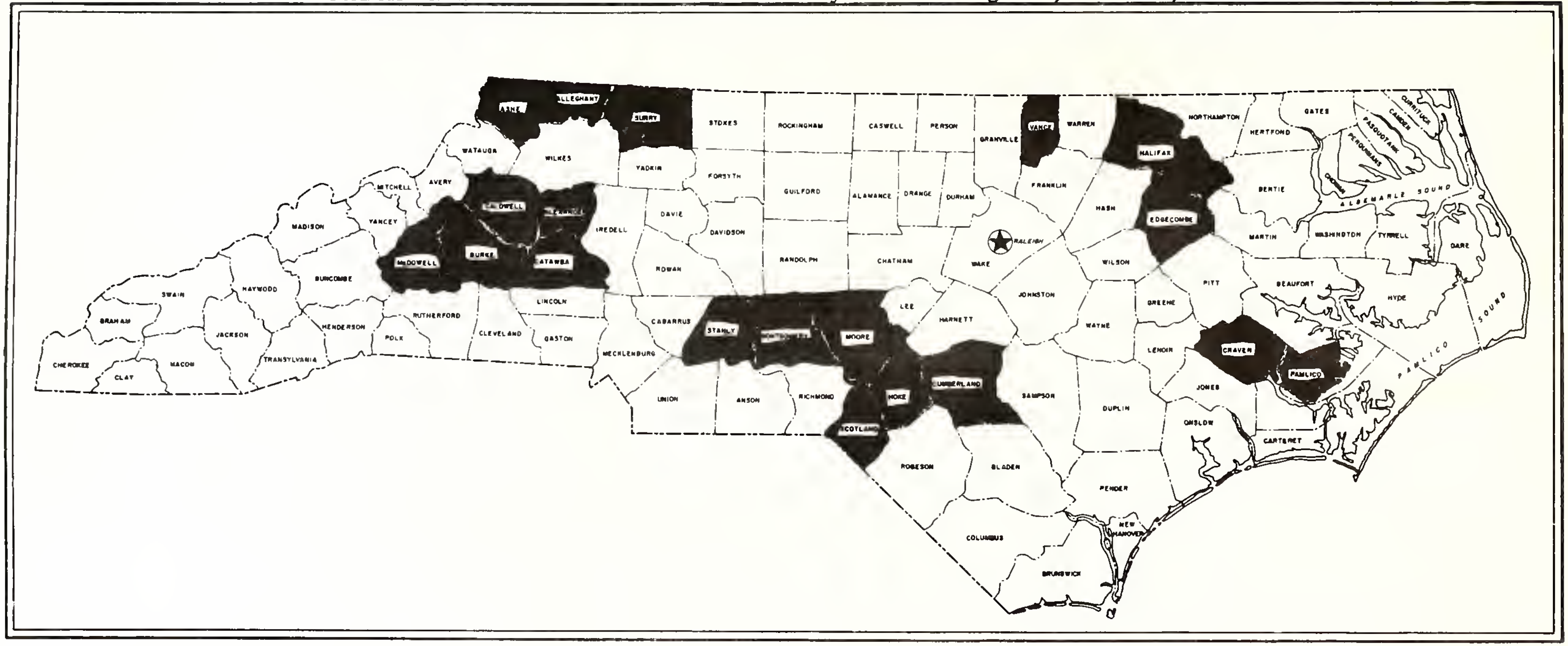


DISPOSITION

AVERAGE LENGTH OF STAY/PATIENT

NORTH CAROLINA REGIONAL MEDICAL PROGRAM

COMPREHENSIVE STROKE PROGRAM: Community Stroke Programs, October, 1970



Counties = 19
Population served =915,000
Hospitals = 22
Nursing Homes/ECF = 9
Existing manpower trained:
    Professional = 860
    Allied Health = 493, March 1971
Health Departments = 19

## Continuation Education in Dentistry
Project Director, Don L. Marbry, D.D.S.

1. (A) Document in which hospitals and to which groups of local dentists have you given presentations; how many physicians or dentists attended each.
   (B) Do you have any way of knowing whether in fact your presentations had the desired effect, that is,
      a) updated the dentists' knowledge of and skills relating to diabetes, heart disease, cancer, renal disease, hemorrhagic disease, stroke, etc.
      b) made hospital administrators and physicians more aware of the necessity of dental procedures on hospitalized patients.

(A)

| Hospital | Dental Society | M.D.'s | D.D.S.'s | Sessions | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | I, | II, | III, | IV, | **<br>V |
| Pitt County<br>Greenville | Pitt-Beaufort | Physician programs did not begin until March 1 and thus information not available | *(18) | 17, | 19, | 13, | 20, | — |
| Wilson Memorial<br>Wilson | Wilson | | *(16) | 11, | 16, | 9, | 6, | — |
| Annie Penn<br>Reidsville | Reidsville | | *(6) | 5, | 6, | 8, | 7, | — |
| Rowan Memorial<br>Salisbury | Rowan County | | *(18) | 18, | 17, | 18, | 20, | — |
| Memorial Mission<br>Asheville | Bumcombe County | | *(56) | 20, | 18, | 19, | 17, | — |
| Margaret R. Pardee<br>Hendersonville | Hendersonville | | *(15) | 14, | 14, | 12, | 12, | — |

*Total number of dentists practicing in that community.

**Session number V presently being presented and will not be completed until May, 1971

(B) a) We feel that presentations have updated the dentists's knowledge and skills relating to diabetes, heart disease cancer, renal disease, hemorrhagic disease, and stroke. As always, it is difficult to evaluate continuing education, but we do feel that due to the fact that many of our presentations were programmed and required an overt action on an answer sheet, that the desired was accomplished. Although there was evidence that some answer sheets were falsified by marking the sheet after the correct answer was given, it still indicated some covert response taking place and an indication that the desired effect of updating skills and knowledge was being obtained.

An evaluation questionnaire is being given to each participant at the conclusion of the final program (V) now being presented and it is felt that his will also help verify our conclusion about desired effect.

b) Hospital administrators and physicians have been made more aware of the necessity of dental procedures on hospitalized patients by the fact that they have accepted the program for their hospital as well as having attended several of the sessions. The administrators have assisted in arranging facilities for the program, utilizing their personnel for tours of the facilities, as well as making commitments for future dental acquisitions. One of the hospital administrators is presently in the process of acquiring dental equipment and each of the other administrators has indicated that he would be most willing to pursue this if the dentists in the community request it.

Physician awareness will be made more evident following the program now being presented to them and which will not be completed until a later date.

(C) Have some programs been more successful than others? Is it something about the personalities and interests of the particular participants or something about the environment, such as size of hospital, rural/urban aspects of the community etc?

Some programs have been more successful than others but only in one case has lack of success been outstanding and that seems to involve the size of the community and hospital as well as the personnel available to that hospital. The one large community selected has had the poorest attendan percentage-wise, of the six communities involved. We feel it is due in large part to the fact that dental specialists (oral surgeons) are available to this community and perform functions in the hospital that cannot be done in other smaller communities due to absence of this specialist. It is felt by the general dentist in the large community that since the oral surgeon is available and can perform this function, that he need not participate in the program and is not needed--as he would be in the smaller community. For this reason we are recommending that the larger communities be excluded in future projects such as this and concentration be placed on the smaller community that must rely on the general dentist for these skills and knowledge.

2. Have you determined the best possible means of delivering this type of education to dental practitioners?

We have determined from subjective estimation and questionnaires that the best possible means of delivering this type of education to dental practitioners is to take the program to the community rather than requir the dentist to travel to a distant learning center. As one dentist indicated, "this is not the program I would have chosen to go to, but I know in the back of my mind that I need to know more about this type of medical stuff," and this indicates that he attended only because it was made convenient for him, but he then found it was worthwhile. This has seemed to be one major factor in the high attendance we have had in five of the six communities.

Questionnaires presently being completed by dentists and physicians should give some idea as to the best method of delivery, be it programmed, taped, lecture, etc. Several methods were tried in an attempt to determine their effectiveness and response from the participants will be available at a later date.

3. Have you tried in ways other than formal presentations to stimulate greater use of in-hospital dental facilities or greater understanding in the medical community of the dentist's role in total health care?

Other than formal presentations there has been a great deal of correspondence and dialogue relating to a greater understanding of the dentist's role in total health care in the community. Tours of the local hospital were arranged in order to acquaint the dentist with the facilities and what was available for his use or--more to the point--what was not available and would need to be acquired for the dental practitioner to become an effective member of the health team.

4. (A) Construct a table, using the headings given below, to document increases in dental procedures in hospitals and increases in hospital dental staffs in the last three years. Please provide the average number of dental procedures in particular hospitals in 1967 and 1970 and the number of dentists on hospitals staffs in particular hospitals in 1967 and 1970.

(B) Can you tie the changes to the influence of your project?

(A) The table requested here cannot be constructed at this time, due to a number of reasons:

1) Hospital records are very unreliable when dealing with dental procedures relating to that hospital. Many procedures go unrecorded; many are recorded only if surgery is performed; consultative services are most often not computed, and many other efforts go unrecognized due to the lack of a true dental service within the hospital. A survey of some thirty hospitals in 1968 indicated that not one could verify that the number of dental activities performed in that hospital was the actual number on record.

2) Procedures in 1970 would have little relationship to our program as the program relating directly to hospital dentistry was conducted in October 1970 and one could hardly expect any great change in procedures to occur in a period of only two months. This will have to be evaluated after a period of a year or more has elasped.

3) Increases in hospital dental staff will also be reflective of two months as indicated in (2) above and even after a period of time it may reflect only the number of new dentists moving into the community. The base line figure is inflated due to most dentists being on the staff since it is the customary and professionally or socially acceptable thing to do, and may not indicate any participation whatsoever--just a name on a staff list.

(B) Changes which can be tied to our project will be available only when an effective dental service is established and effective records are being maintained as related to dental procedures.

5. Describe the consultative services your project has provided.

Consultative services provided by this project have been in the form of relating to the dentists, physicians, and particularly the hospital administrators, the most appropriate and practical type of dental care facility to be installed in a community hospital. Hospital administrat are quite concerned about space utilization and if the expenditure can be justified to install dental equipment in some area of the hospital. Consultation services have been provided to these administrators to indicate that portable dental equipment is probably the most adaptable answer and the expense can be more easily justified than for a more conventional stationary dental setup. Consultation has also been held with dentists in these communities relative to their request for dental facilities in the community hospital.

6. (A) What on-going, formal relationships has your project effected since its RMP funding?

(B) Which of these relationships that your project has initiated will contin after the life of the Regional Medical Program?

(A) Relationships effected by this project since its RMP funding have been:

a) With other RMP projects - Correspondence from many RMP programs outside North Carolina has been received requesting information relativ to our project since it was the first dental project funded by RMP. These programs have been interested in information regarding our objectives, funding, evaluation, and other facets of the project.

Relationships have also been effected with other projects within North Carolina. Consultation has been received and given to other N. C. projects such as heart and stroke projects.

b) Between dental school and local hospitals--it is evident that there now a closer relationship between the six community hospitals select as centers for the pilot project and the UNC School of Dentistry. These hospitals had little or no contact with the School of Dentistr prior to the project whereas presently there is excellent liaison between the hospital, dental school, and dentists. It is also felt that the twenty-five other hospitals surveyed now have an understand that the dental school is interested in them and hospital dentistry.

c) Between dental school and local dental societies - this project has had to work very closely with the local dental society in presenting the programs. The society was contacted first to determine if it desired the program and only then were the six pilot areas selected. Local dentists, usually an officer of the local society, were select as coordinators for the project and worked as liaison between the dental school and the local societies.

d) The project has worked closely with the North Carolina Dental Societ and particularly with members of the society such as the Past President, Dr. Colin Osborne, and the Chairman of the Hospital Dental Service, Dr. Walter Finch.

(B) It is anticipated that all of the relationships mentioned above will continue after the life of the Regional Medical Program. It is the desire of the dental school, local dentists, and hospitals that communication continue between them, particularly with regard to the future or further development of a hospital dental service within that community. It is certain that dental school faculty members will continue to speak and conduct programs for local society groups.

7. (A) If RMP were to cease funding your project, what would it leave behind? For example, educated people (how many and to what extent), on-going relationships between institutions, equipment?

(B) What services would have to be continued to maintain the state of affairs your project has brought about. If planning is underway for the support of these efforts, please outline briefly.

(A) If RMP were to cease funding this project it would leave behind approximately ninety dentists with updated skills in the areas discussed in the objectives. Approximately the same number of physicians will hopefully have additional knowledge in the field of dentistry as well as improved referral-consultative patterns. Ongoing relationships will continue between the dental school and participating hospitals and the dentists of that community. Liaison between dental school faculty and practicing dentists in the state has been established and should continue with recommendations and requests from the dentists flowing freely to the school. Hospital Dental Services should be improved, increased, or developed in at least some of the six pilot communities with equipment being initially established in at least one of the six involved.

(B) A continuation and expansion of the project has been requested in order to update the skills of a greater number of the dentists and physicians in the state rather than just the small percentage included in the pilot project. The pilot project has done little more than clearly demonstrate the need for this type program; now expansion is necessary to resolve the problem.

8. Discuss any other project objectives not asked about thus far.

All project objectives have been covered and discussed in previous paragraphs.

9. Has your present system of data collection allowed you to answer these questions relatively easily. If not, how do you plan to change your system of data collection in the future so that your activities will be more effectively documented.

Yes, the present system of data collection has allowed the questions to be answered relatively easily although evaluation of continuing education would be difficult regardless of the system of data collection and particularly in the setting in which we have been working. Improved hospital records and other improvements would be a great asset in evaluation of a project of this type; however, subjective evaluation of attitudes of the participants remains the greatest tool and this is difficult to grasp or document.

## Continuation Education for Physical Therapy
### Project Director: Miss Marjory Johnson

1. (A) How many local P.T. groups have been formed?
   (B) Where?
   (C) What activities have the groups engaged in and what has resulted from their formation?
   (D) Which groups seem to function better than others? Why? Is it something about the particular personalities and interests of the participants or something about the environment, such as rural/urban aspects of the community, hospital facilities, etc.

(A) 1. Raleigh - Staff at Rex Hospital and Wake County Memorial Hospital have shared program content for noon programs. Some programs are taped on cassette tapes and exchanged. Other therapists in the Raleigh area are invited to attend.

2. Winston-Salem - predominantly at noon staff meetings at Baptist Hospital. Few outsiders attend. One program was held locally on cardiac conditioning in cooperation with Wake Forest University.

3. Wilmington - In-service education followed instruction of physical therapist in nerve conduction procedure. Others will follow.

4. Chapel Hill - Durham
Two cooperative ventures were planned for January and February 1971. A film on patient transfer techniques was reviewed at Duke Universit V.A. Hospital in Durham, and North Carolina Memorial Hospital. Individuals who viewed the film included 26 physical therapists, 3 occupational therapists, 1 recreational therapist, 6 registered nurs 1 physical therapy assistant, 13 physical therapy students, and 8 supportive personnel. Personnel from hospitals and other facilities were invited to join the faculty and staff, Division of Physical Therapy, to see a videotape on "Levadopa in the Treatment of Parkinson's Disease and Syndrome." A physician, pharmacist, and drug salesman were available to answer questions. Sixty people attended the hour program; this included 13 physical therapists, six occupational therapists, in addition to nurses, social workers, and aides. This area of the state is not a high priority area for planning programs, but it is apparent that personnel not employed at the local universities should be informed about available continuing education opportunities.

(B) 1. The staffs of the physical therapy department at the two Raleigh hospitals that were mentioned are a cohesive group but include many who work only part time. This makes it difficult to plan programs at a convenient time for all concerned, hence the current arrangement. Patient load is also a restrictive factor since it is often difficult to plan programs during working hours (outside of noon hours) and treat all referred patients.

2. The number of physical therapists in the Wilmington area has increase from two to four since last fall and for the first time in years there are more applicants available than positions. If the staff becomes stablized, this group could expand to become more regional.

3. The problem in Winston-Salem continues to be critical, particularly with lack of adequate staff at North Carolina Baptist Hospital. Other physical therapists in the city have not been very active in local programs although five attended one program.

2. (A) How many regional groups have been formed?
   (B) Where?
   (C) What activities have the regional groups engaged in and what has resulted from their formation?
   (D) Which groups seem to function better than others? Why? Is it something about the particular personalities and interests of the participants or something about the environment, such as rural/urban aspects of the community, hospital facilities, etc.

(A) 1. Charlotte area - In addition to formal programs, the physical therapists in the Charlotte area (routinely includes physical therapists from surrounding counties) plan one picnic during the year to become acquainted with other physical therapists and their families. This has helped to make the group more cohesive. They take advantage of other programs in the area that are of benefit to physical therapists; they also invite others to their programs. Three younger physical therapists have taken over planning the programs this year to share the responsibility; they are also trying different approaches. Most of the programs are now held in the day time instead of night. Physical therapy assistants regularly attend programs in addition to the physical therapists. The programs have been held at most of the hospitals and treatment facilities in addition to Central Piedmont Community College, so cooperation has been exceptional.

2. Asheville area - the physical therapists in this area have begun to include others in their invitations to attend programs. The person who had been responsible for organizing this area has moved so someone else has assumed this responsibility and is doing very well. Types of programs vary and most of the physical therapists in that area continue to be active. When the program is discussed with "outsiders", the "insiders" speak with a sense of pride. They have a mechanism to convene in order to discuss problems of mutual interest as well as provide regular programs.

3. Greensboro area - the physical therapists in this area (including High Point, Asheboro, Burlington, and Winston-Salem) have had difficulty establishing an on-going program. More effort has been exerted to identify physical therapists in the area who are interested and willing to assist with arranging programs and notifying physical therapists in the area as well as others who might benefit from the scheduled programs. The physical and occupational therapy staff at Greensboro Cerebral Palsy School is relatively stable; one physical therapist is a graduate of the University of North Carolina and the other physical therapist and an occupational therapist have attended short courses at the Division of Physical Therapy in Chapel Hill. The coordinator of the Project met with the professional staff (physical, occupational, and speech therapists) to plan programs of interest in the area of neurophysiological approaches to treatment (this includes all types of patients, particularly stroke patients), and dates were arranged for the first two of four programs in a sequence. Others will be planned for the future. A requested program on different topics has been planned for High Point, but has not been scheduled.

(B) Individuals, or small groups, have been responsible for planning regional meetings. They have received varying amounts of assistance in planning by the Project Director; very little guidance has been needed for some programs; in some instances, the programs have been planned and presented by Project Staff after the regional people identify the objectives for the program. Financial assistance is provided if the program is presented by someone out of the region and not Project Staff. Projected future programs are sometimes cancelled because a more interesting and timely topic has precedence; this indicates that there is constant concern about the programs. Types of programs have changed through the three years of the project. Initially, most of the programs were lectures by physicians. Many of the present programs are given by physical therapists. Types of programs include lecture-demonstrations, discussion programs, panel discussions, and workshops.

(C)
1. Personalities are the major factor, and the professional interests of those personalities. The interests have to be sufficient to generate a similar interest in others as well as help plan programs for many. There has to be a mixture of unselfishness and selfishness on the part of those responsible for regional planning.
2. Administrative support from the facilities in the area must be positive in order for the program to be successful, particularly where programs are scheduled during working hours. There has been no problem in finding adequate space for meetings. Programs are scheduled for the convenience of the participants and have not been dictated by administrators.
3. Physicians have been very cooperative in providing programs, inviting local physical therapists to programs of interest to them, and have attended some of the programs in the Charlotte area.
4. Urban areas where a large number of physical therapists with mutual interests are located are the most effective areas. Included in the rural areas are small towns with few physical therapists in the geographical area. The variety of treatment facilities makes the type of program to interest all a difficult task.

3. (A) What continuing education programs have been given?
(B) Where?
(C) How many attended each program?
(D) How many hours of instruction were given in each course?
(E) Have those attending made use of the things taught in the courses, such as new ways of evaluating patients, changed referral patterns, different use of facilities in the area, etc? Please summarize.

(A) Charlotte Area

1. September 24, 1970 - Charlotte Rehabilitation Hospital and Charlotte Memorial Hospital. (2½ hrs.)

   "Rehabilitation of the Hemiplegic" - Vern Mooney, M.D., Rancho Los Amigos, California.

   18 physical therapists. (Other attended. This was not financed by this project, but physical therapists were invited to attend because of the project.)

   October Party for 12 physical therapists and 18 family members.

2. January 12, 1971 4:00 - 6:00 P.M. - Charlotte Memorial Hospital
   "General Review of Electrical Diagnostic Procedures" -
   Charlene Nelson and Sue Flowers, Division of Physical Therapy, University of North Carolina
   17 physical therapists; 6 Orthopedists; 5 Residents.
3. January 13, 1971 9:30-12:00 Noon and 1:30-3:30 P.M. (4½ hrs.)
   Charlotte Rehabilitation Hospital.
   "Evaluation and Treatment of Patients with Lower Extremity Amputations"-
   Sue Flowers, Division of Physical Therapy, University of North Carolina
   17 physical therapists; 2 Residents; 5 P.T. assistants; 5 P.T. assistant students.
4. March 25 program to be held at Presbyterian Hospital includes 5 panel members to speak on present and future referral sources for the chronically ill. A social worker from Charlotte Rehabilitation Hospital will delineate some resources of the Department of Social Services, Crippled Children, Volunteer Organizations which include Easter Seal, National Foundation, Heart and Kidney; a vocational rehabilitation counsellor; a representative from Social Security to speak on "Medicare"; a representative from the Model Cities Program; and the regional physical therapy consultant, State Board of Health are on the panel.

(B) Asheville

1. October 20, 1970 - Memorial Mission Hospital (2 hrs.)
   "Aphasia" - Eunice Austin, Speech Therapist.
   11 physical therapists; 1 registered nurse.
2. November 10, 1970 - Asheville Orthopedic Hospital (3¼ hrs.)
   "Management of the Lower Extremity Amputee" - Sue Flowers, Division of Physical Therapy, University of North Carolina
   11 physical therapists; 1 occupational therapist.
3. February 9, 1971 - Memorial Mission Hospital (2 hrs.)
   Discussion of Rehabilitation proposal by the North Carolina Division of Vocation Rehabilitation. (This was a follow-up of a seminar sponsored by the North Carolina Physical Therapy Association in Raleigh on January 16, 1971.)
   10 physical therapists; 1 occupational therapist; 1 administrator.
4. March 23, 1971 program on "In-service Education for Aides" is scheduled with Mrs. Virginia Williams, Chief Physical Therapist at the Charlotte Memorial and Rehabilitation Hospitals as guest speaker. A future program will be on the management of the upper extremity amputee.

(C) Greensboro

1. December 11, 1970 - Greensboro Cerebral Palsy School (3 hrs.)
   Carol Fiterman, pediatric physical therapy fellow, Division of Physical Therapy, University of North Carolina at Chapel Hill, discussed on the Bobath approach to treatment of patients.
   2 physical therapists; 4 occupational therapists, 1 teacher.
2. Four programs, two hours each, have been scheduled for March 17 and 24, and April 15 and 29, 1971. All known physical and occupational therapists in the area have been notified. The main topic is a neurophysiological approach to the treatment of patients.

(D) Chapel Hill

1. January 6, 1971 - Nerve Conduction (4 hrs.)
   Two physical therapists were given basic instruction in the use of nerve conduction as a diagnostic tool. One physical therapist was from New Bern and the other from Wilmington.

2. January 20-22, 1971
Workshop on Planning Effective Treatment Programs for Each Stage of Recovery of the Patient Who Has Had a Cerebrovascular Accident (21 hrs.)

    Twenty-seven physical therapists in addition to 3 UNC faculty and 4 guest faculty. Geographical distribution included physical therapists from Buncombe, Durham, Forsyth, Granville, Guilford, Henderson, Lenoir, Mecklenburg, Orange, Randolph, Rowan, Sampson, Wake, and Wilson counties. Fourteen of the group had not participated in any of the previous programs sponsored by the project. The experience of the group was also varied; one graduate in 1946 and three had graduated in 1970. The treatment programs that were developed by members of the group are being duplicated and will be distributed in addition to suggestions for speech training which has been provided by the Comprehensive Stroke Program. None of the participants are from communities that have Comprehensive Stroke Programs; the physical therapist who works with that project did participate in the Workshop. Materials developed will be available to all interested.

3. January 25-27, 1971 (21 hrs.)
Review of Anatomy and Functional Anatomy of the Shoulder Girdle and Upper Extremity

    20 physical therapists and 1 occupational therapist.

    January 28-29, 1971 (14 hrs.)
    Review of Anatomy and Functional Anatomy of the Pelvic Girdle and Lower Extremity

    18 physical therapists.

    Fourteen physical therapists attended both Review courses; 6 additional physical therapists and one occupational therapist attended the first course; 4 additional physical therapists participated in the latter course. Geographical distribution included physical therapists from Buncombe, Cumberland, Duke, Gaston, Granville, Jackson, Mecklenburg, Orange, Pitt, and Wake Counties. Nine of the physical therapists had not participated in any of the previously scheduled project programs.

    Evaluation: Two mechanisms were utilized to evaluate change in behavior of the participants in the first Review course since a two-week course was offered in 1969 on the same subject material. The six participants in 1965 improved from an average of 35% on the pre-test to an average of 71% on the post-test. The same test was up-dated for 1971.

    Pre-test scores for twenty-one participants in 1971 averaged 44% compared with 81% on the post-test.

    Participants scored an average of 62% on the Lower Extremity pre-test with an average of 83% on the post-test.

4. A Symposium on Nerve Conduction and Electromyography is planned for April 25, 1971, Chapel Hill, and is open to physical therapists who have some basic knowledge and experience in this diagnostic technique.

5. A Workshop on Expansion of Physical Therapy Services is being planned for May 23-25, 1971, Greensboro, N. C.
6. In-service education programs.
   a. Memorial Mission Hospital, July 8, 1970 (2 hrs.)
      Neurophysiology as it relates to treatment - Marjory Johnson, Division of Physical Therapy, University of North Carolina
      3 physical therapists, 1 physical therapy student,
      4 physical therapy aides, 1 LPN.
   b. Memorial Mission Hospital, November 11, 12, 1970. (3 hrs.)
      Bed positioning; passive, active-assistive, active, and resistive exercises. Included laboratory practice. Postural drainage techniques and resistive exercises preparatory for crutch walking were added on the second day.
      1 RN - Assistant in In-service Education (Nursing),
      2 LPN's, 4 physical therapy aides; 1 aide (PT) Transporter
   c. St. Joseph's Hospital (1 hr.)
      Instructions to one physical therapist on electrical diagnostic techniques including chronaxie, strength-duration curves, and nerve excitability.

(E) Many of the physical therapists have conducted in-service education programs for other staff members; others are being planned. One local physical therapist borrowed film strips to aid in conduction of four programs for nursing home personnel. A physical therapist borrowed a film on Gait Deviations. Another physical therapist developed a similar program in her hospital with the assistance of the medical staff; she was provided with information regarding available visual aids. A more extensive follow-up will include more detailed information about the impact of the programs which were given in all areas of the state. This will include the change in referral patterns.

4. Have any P.T.'s been involved in sharing manpower and facilities? If so, what data do you have to show that sharing is going on?

There is evidence that sharing of manpower is increasing in many areas of North Carolina. For several years, a cooperative arrangement has existed between the physical therapy staffs at Rex and Wake County Memorial Hospitals in Raleigh. Physical therapy service for the satellite hospitals of Wake County Memorial Hospital is provided by the Raleigh staff. Two physical therapists from Winston-Salem provide service in the Mt. Airy area; several physical therapists in Winston-Salem provide service to a number of the extended care facilities and nursing homes. Home Health Services, extended care facilities and nursing homes in the Durham-Orange County area have qualified physical therapists available on part-time or full-time basis. Physical therapists from Charlotte Memorial and Rehabilitation Hospitals rotate through Community Hospital and the chronic disease hospital in Huntersville; they have been requested to provide services to nearby community hospitals and this is being done on a part-time basis. One physical therapist is employed by hospitals in Banner Elk and Spruce Pine. Physical therapists in Sylva and Waynesville assist each other to ensure patient coverage during vacations. Asheville-based physical therapists provide services to a number of facilities in Asheville in addition to Saluda and Tryon. A more complete documentation of the pattern being utilized for extension of services will be compiled for the May workshop and will be updated during that Workshop. It is anticipated that additional effective methods of expansion of services will be identified.

5. What consultative services have been given? Who used the services? How often?

A. Program planning - this averages twice a month for the physical therapists in the Charlotte and Asheville areas to plan for regional meetings. A minimum of one contact per month has been made with the physical therapists in the Greensboro-High Point area to plan programs. Consultation with physical therapists in Raleigh, New Bern, Wilmington, Wilson, Greenville, and Winston-Salem has averaged about two contacts each in the area of program planning.

B. Administration.

Asheville Orthopedic Hospital - 2 physical therapists (2½ hrs.)
    Sue Flowers, Division of Physical Therapy, University of North Carolina
Memorial Mission Hospital, Asheville - 1 physical therapist (6½ hrs.)
    Sue Flowers, Division of Physical Therapy, University of North Carolina
Memorial Mission Hospital, Asheville - 2 physical therapists (2 hrs.)
    Consultation on electrotherapy equipment, instructions in use of Jobs, equipment, and rearrangement of gymnasium.
    Sue Flowers, Division of Physical Therapy, University of North Carolina
Presbyterian Hospital, Charlotte - 1 physical therapist (3 hrs.)
    Sue Flowers, Division of Physical Therapy, University of North Carolina
Sampson County Hospital, Clinton - 1 physical therapist (4 hrs.)
    Margaret Moore, Mabel Parker, Division of Physical Therapy, University of North Carolina.
Thomasville - 1 physical therapist (4 hrs.)
    Sue Flowers, Mabel Parker, Division of Physical Therapy, University of North Carolina.
North Carolina Baptist Hospital - 1 physical therapist (1 hr.)
    Sue Flowers, Division of Physical Therapy, University of North Carolina
Randolph County Health Department - 1 physical therapists
    Consultation by correspondence in relation to in-service education programs for Health Department staff.

Physical therapists from Buncombe, Orange and Wake Counties have requested assistance in providing resource material for in-service education programs.

One physical therapist in Henderson County requested a bibliography of recommended library books.

Physical therapists in all areas of the state have requested assistance with recruitment of staff.

Four physical therapists have requested information on development of cardiac reconditioning programs.

C. Patient Treatment.

Memorial Mission Hospital, Asheville July 8, 1970 (2 hrs.)
    Marjory W. Johnson, Division of Physical Therapy, University of North Carolina.
    Four neurologically involved patients - evaluation and treatment.
      3 physical therapists, 1 physical therapy student, 2 physical therapy aides.

Asheville Orthopedic Hospital - November 12, 1970 (2½ hrs.)
    Management of a patient with encephalitic paraplegia.
    Sue Flowers, Division of Physical Therapy, University of North Carolina.

Other suggestions regarding patient treatment have been made following formal programs, during informal meetings with therapists and via correspondence.

Consultation regarding patients, particularly stroke patients, in the Greensboro area is being scheduled for March and April.

D. Additional consultation has included identifying resource people to assist physical therapists with their problems as well as helping them to delineate their own needs. Assistance has also been requested on purchase of equipment, utilization of equipment, assistive aids that can be used by patients, and where these aids can be purchased if they cannot be made locally.

6. What evaluative devices have been developed? How many patients can you estimate benefitted from this?

A device to evaluate the patient who has had a cerebrovascular accident is being developed. Information on 142 patients who were evaluated by the latest revision of the device has been computerized and analysis of the data is in process. A minimum of one hundred physical therapists are familiar with the current form; this includes the physical therapists who are members of the community Comprehensive Stroke Programs. Not all of the physical therapists utilize the form but indicate they do a more inclusive evaluation as a result of familiarity with the form. A low estimate would be 1000 patients in North Carolina who have had a more complete evaluation by physical therapists and more effective treatment programs as a result of the evaluation. No additional evaluation devices have been developed. Electrical testing in the area of nerve excitability and nerve conduction has been utilized more by physical therapists in recent months. The extent of the use of nerve conduction studies by physical therapist is currently being compiled and will be available for the April Symposium.

7. (A) What on-going, formal relationships has your project effected since its RMP funding?
   (B) Which of these relationships that your project has initiated will continue after the life of the Regional Medical Program?

(A) 1. The closest working relationship with other projects has been the Comprehensive Stroke Program. The Project Director has served as a consultant to that program to aid in planning and presentation of the physical therapy portion of the first basic training program. Evaluation forms have been made available for use by the physical therapists in the program. There continues to be cooperation between the two projects. No formal relationships have been developed with other RMP projects.

2. Physical therapists from the medical school hospitals serve on the Advisory Committee in addition to five physical therapists from different geographical areas. Physical therapists, North Carolina State Board of Health also serve on the Advisory Committee. There are no formal agreements; any physical therapist can request consultative assistance.
3. Relationships between local agencies and institutions is informal but congenial.
4. There has been cooperation between the Project Staff and members of the North Carolina Physical Therapy Association so that there is no duplication of effort.
5. Project Director has served on a committee of the North Carolina Heart Association to plan a program on "Cardiac Rehabilitation" at the annual meeting to be held in Winston-Salem on May 27, 1971. Physical therapists who have expressed an interest in this phase of treatment are being encouraged to attend.

(B) It is anticipated that all relationships will be continued and possibly strengthened.

8. (A) If RMP were to cease funding your project, what would it leave behind? For example, educated people (how many and to what extent), on-going relationships between institutions, equipment?

(B) What services would have to be continued to maintain the state of affairs your project has brought about. If planning is underway for the support of these efforts, please outline briefly.

(A) If RMP were to cease funding this project, it would leave behind approximately 175 physical therapists who have attended one or more programs sponsored by this project. Many physical therapists will have fewer administrative problems. They are better able to evaluate and treat patients more effectively; they are more aware of resources within the community; they are more aware of the role of other health personnel in the management of their patients; they recognize the need for in-service education for all members of the physical therapy staff and many have initiated programs; they are more aware of additional areas of concern including newer methods of evaluation and additional diagnostic categories including the acute renal patient, the convalescing heart patients, and others; and they are recognizing community responsibilities in addition to individual patient responsibiliti Most of the physical therapists in the state will continue to look to the Division of Physical Therapy, University of North Carolina for assistance with administrative problems, patient evaluation, patient treatment, and continuing education programs. A more comprehensive testing device is available for the evaluation of patients who have had cerebrovascular accidents. Information on 142 evaluations has been computerized and this information is available. All of these will be continued to the extent that time, finances, and ability permit. Many consultations will have to be by telephone instead of in person. Equipment includes a videotape recorder, 1 television monitor, a super-8mm. camera and projector, 2 lamps, a portable stenorette, and a portable lectern with amplifier.

The regional programs in the Asheville and Charlotte areas will continue, but they will continue to look to the Division of Physical Therapy for guidance and support. In-service education programs in many departments will continue to grow and be strengthened. Encouragement and support from outside of the other regions is essential for development of these programs. Physical therapists who are isolated or who have problems need to know the resources available to them.

The faculty of the Division of Physical Therapy, School of Medicine, is committed to a philosophy of providing the best undergraduate curriculum possible, recognized its responsibilities in the area of continuing education, and also plans to strengthen the educational program by offering graduate programs. Graduates of this curriculum indicate that they have learned the importance of continuing education and are very active in their regional areas, both in planning and participating. Methods of financing remain a crucial issue.

(B) Personnel are required to continue the program since the equivalent of at least a full-time professional person is necessary for the program to continue to operate and grow. Supportive funds for secretarial assistance, supplies, and travel are essential. Expansion of the program is needed, not curtailment. Financial support has been requested in a budget proposal. Unless additional funds are available for matching an award from the Duke Endowment to the Hospital Research Education and Research Foundation, Inc., then no funds will be available to support continuing education. It would be easier to secure funds for traineeships than for this type of program. As a professional group, the physical therapists in North Carolina are not financially able to support the type of continuing education programs they are interested in attending on a regular basis.

9. Discuss any other project activities, such as papers given, movies made and shown, etc. that have not been asked about thus far.

Videotapes and super-8mm. movies have been made of the evaluation of five people; these included four patients who had some degree of disability following cerebrovascular accidents and one normal individual. These have been utilized to evaluate the testing form and to educate physical therapists on a method of evaluation. Over half of the physical therapists in North Carolina have seen the films or videotapes. One of the films was utilized for a workshop session, Research Section, American Physical Therapy Association, on July 1, 1970. The participants at the workshop were asked to determine the usefulness of movies in assessment of inter-rater reliability in evaluation of physical therapy patients. Five thought that it can be very useful; nine thought that it can be moderately useful, and one checked them as being minimally useful. No person thought they would be a useless means of assessment. The group discussion was good and many had suggestions regarding the use of movies and videotapes for other aspects of patient care in addition to evaluation.

Videotapes have been made and others will be made of treatment techniques. These are being shown when appropriate to the topic presented. Films and videotapes have been made on normal and pathological gait, amputees, rehabilitation techniques, goniometric measurement, hand evaluation, nerve conduction, application of splints, and use of modality equipment - sound and titles need to be added to some of these so that they can be loaned rather than always be accompanied by a faculty or staff member. Experience has shown, however, that programs are more effective if not limited to a movie but include opportunity for discussion. Slides and transparencies have been developed as visual aids for use with many of the programs that have been offered by the faculty.

10. Has your present system of data collection allowed you to answer these questions relatively easily? If not, how do you plan to change your system of data collection in the future so that your activities will be more effectively documented?

"7. (A) What on-going, formal relationships has your project effected since its RMP funding?"; was the most difficult to answer and I doubt that a change in data collection would help me. There have been many contacts with RMP staff and additional people involved in other projects since I have needed to be cognizant of the activities and inform people on the local level who could be of assistance to them. I did not list all of the institutions and agencies that have, in some way, participated in this project. This information has been included in past reports, and it can be updated. What activities should not be reported? I have not asked for documentation of local programs to include them in any report unless our own faculty or staff were responsible for presentation of the program, but very few of these would have been initiated if this project had not been activated. On the other hand, regional programs are a vital part of the project whether Project Staff are present or not.

## Diabetes Consultation and Education Service
Project Coordinator: Virginia C. Coyle

From Grant Renewal Proposal, Project Report for the period April through December 1970 and News and Reviews July 1, 1969 through June 30, 1970

### Continuing Education for Professional Persons

### A. Short Term Educational Programs

Short Term educational programs for physicians, nurses, and other health-care persons are conducted throughout the state. The length of the programs varies from one--hour didactic presentations to two--day conferences, which include a number of different speakers and a variety of teaching methods. ...Program content is keyed to the need expressed by the sponsoring groups; and where feasible, the physician-nurse team approach is used. Prepared in response to requests were handouts concerning:

1. An annotated list of available patient teaching materials.
2. Nursing Care: Diabetes and Pregnancy
3. Nursing Care: Diabetes and Surgery
4. Nursing Care: Ketoacidosis (Diabetic Coma)
5. Nursing Care: Hypoglycemia (insulin reaction)
6. Differentiation of the Clinical and Chemical Features of Ketoacidosis and Hypoglycemia.

Most programs are planned for nurses and/or physicians, but many are open to other interested professional persons. Dietitians, pharmacists, representatives of drug companies and physicial therapists often attend, as well as students from these disciplines.

The programs have, indeed, focused attention on diabetes at the local level, and they have stimulated the desire for more knowledge --- and for action--- particularly as related to local needs.

### Educational Activities

a. Programs for physicians and allied health groups: 118 programs have been held with a total attendance of 3520. Ninety-eight of these programs were for allied health personnel (attendance 3113); 20 were for physicians (attendance 407).

An "opinion" evaluation form has been completed by participants following some of the programs. Three hundred and fifty-five of these forms returned before April 1970 have been tabulated regarding paramedical program presentations. Using a five-point scale (1 = best; 5 = poorest) most persons have rated the presentations as 1 or 2, with only a few falling into the 4 or 5 categories. Most comments have been positive. These data are especially helpful in planning content for other programs, and in judging the acceptance of different methods of presentation.

For the period April - November 30, 1970, 56% of the evaluations were returned, and the results in general were very positive. On a five-point scale ranging from "extremely helpful" to "not helpful" 69% of the public health nurses and 41% of the hospital nursing staff checked one of the two upper categories. Only one in each group felt that the program was not helpful. Also 52% of the public health nurses and 65% of the hospital nursing staff felt that the program had made a difference in the way they were carrying out their work, and many of them documented this with examples of situations in which their functioning had been a direct result of the program. Almost half of the public health nurses who felt their activities had not changed stated that at the moment they had no diabetics in their case load.

b. For patients and their families: On a one-to-one basis an average of 93 patients per month were taught in fiscal 1969 and 97 in 1970. These required an average of 2.0 teaching contacts per patient in 1969; 2.5 in 1970. (See Table at the end of this report.)

In groups, a total of 87 classes were held with a total attendance of 533 persons.

Supporting community agencies contacted in behalf of patients included the Public Health Department, the Department of Public Welfare, the Commission for the Blind, civic groups, church groups, etc.

c. For the lay public: Six programs, with an attendance of 251 persons, were designed and presented to lay groups by the educational director and the DTN's. In addition, Diabetes Chapters have presented educational programs to lay groups since this is a primary objective of all NCDA-affiliated Chapters. NCDA physicians, the educational director and the DTN's are all very much involved in helping local groups to plan and conduct programs sponsored by the Chapters. On the whole, attendance has been approximately 75 to 150 persons per meeting.

### B. Consultation Service

The physicians and nurses of the Diabetes Service staff make themselves available for telephone consultations regarding individual patients. Telephone consultations are usually a result of the educational programs.

Several physician programs have included a structured patient consultation time as a part of the program. Nursing programs are now beginning to include this service also.

## II. THE DIABETES TEACHING NURSE, AND DIRECT PATIENT TEACHING

### A. The Diabetes Teaching Nurse

The concept of the Diabetes Teaching Nurse (DTN) arose as physicians in the mountainous western section of the state explored the needs of their diabetic patients as they prepared for a two-day continuing education program in their area. Following the program, which included a structured "patient consultation time," these physicians expressed their ideas to the project director, pointing out that on any given day ten to fifteen percent of their hospital patients were diabetic. They felt that the Diabetes Service project could make a major contributi toward improving the care of the diabetic by helping to establish the position of a nurse for the purpose of:

1. (a) teaching the recommended diabetic regimen to patients and their families,

   - (b) providing, or planning for, continuity of patient care,
   - (c) seeking and/or coordinating services of the desired community agencies for the benefit of the patient,
2. providing inservice education to other health-care personnel in the area,
3. stimulating and providing educational programs for lay persons in the area, and
4. working with both professional and lay persons in promoting and participating in the formation of lay diabetes societies.

Dr. T. Franklin Williams, the Project Director, and Miss Julia D. Watkins, Associate Director for Nursing, worked closely to establish such a position. The following guidelines were used:

1. The nurse would be employed through a local "sponsoring" institution which would provide a base of operations and the desired professional affiliations. The DTN would be employed through Nursing Service, according to the criteria established for the employment of other nurses, with her salary, fringe benefits, vacation and sick leave in keeping with the policies of the sponsoring institution.
2. Minimal funding would be provided by the project toward the salary of the DTN, her travel expenses and supplies.
3. The sponsoring institution and the community would be responsible for carrying on this function as project funds were withdrawn.
4. Other guidelines, developed by the institution, would allow the nurse to work without the restrictions of usual line authority, and would reflect the outlook of the physicians and others giving leadership to the program, medical policies, etc.

There are now several Diabetes Teaching Nurses. Most are housewives and were not otherwise employed at the time they were recruited. One is employed full-time through a county hospital in western North Carolina; another is half-time in a small community hospital also in western North Carolina. This is rugged mountain country with few physicians and few public health nurses. A third DTN is employed half-time through a larger urban hospital in the central piedmont area of the state, and a fourth is employed full-time through another urban hospital in a different section of the piedmont area. These four nurses have preparation in nursing at the diploma or baccalaureate level and have been very active in fulfilling the purposes listed above. However, their primary responsibilities have centered around the patient: teaching him and his family members how to carry out the recommended diabetic regimen, and often arranging and coordinating the services of various community agencies in his behalf. The DTNs' have developed teaching methods, referral systems, etc. which are suited to their own needs. One, for example, has recently worked out a method for teaching two deaf-mute patients referred to her; another developed a sketch book of pictures which she could take to the bedside of hospitalized patients. Activities in the other areas stated above have included planning and carrying out screening programs; holding in-service education programs for other nurses (RN's, LPH's, aides and students); presenting programs for civic, church and school groups; arranging for children to attend the Carolinas Camp for Diabetic Children; participating in the formation and activities of lay diabetes societies, etc.

Two additional nurses have been an integral part of the project from the beginning. These nurses, with preparation at the Master's level, have held joint positions with the Diabetes Service (75-80% time) and a university faculty. One nurse is with the University of North Carolina and the other with Duke University. They have concentrated their activities on continuing education for professional persons and the development of educational materials, but have also maintained patient contact in order to help enrich their other contributions.

Miss Watkins has effectively guided these six nurses in providing the services for which their special positions were designed, with the project coordinator handling the administrative aspects involved in such a program.

### B. Direct Patient Teaching

Most patients are referred to the Diabetes Teaching Nurse by a physician, either from his office or within the hospital. The content of the teaching program may vary in the different sponsoring institutions according to the methods practiced and endorsed by the medical staff. In general (as quoted from established policies in one of the sponsoring institutions), "A standard program of instruction for the diabetic patients and their families will be taught by the Diabetes Teaching Nurse to all referred patients with any exceptions being specified by the referring physician." The referring physician is available for consultation and assistance as needed.

Evaluation of the DTN position and activities: Patient education and the monitoring of the patient's management of the diabetic regimen as prescribed by the physician is a primary function of a DTN at the community level.

As evidenced in their monthly reports, the DTNs are involving local community agencies and civic groups in the delivery of health care to patients. Indications are that they routinely contact Public Health Departments, the Department of Public Welfare, the Commission for the Blind, and Vocational Rehabilitation. They have also been active in the organization and ongoing activities of three lay diabetes societies, and one DTN has been appointed to the Board of Directors of the North Carolina Diabetes Association.

The special services of the DTN to patients provide the physician with more time to engage in those tasks which only he can carry out. Physicians value these services, and statistics have been compiled to show the extent to which they refer their patients to the DTN. For example Haywood County Hospital has 27 physicians on its staff, and 25 of these physicians are referring their diabetic patients to the DTN. The two who do not are in specialities which would not generally require her services.

University-based (corps staff) personnel have regularly visited the DTN sites to meet with medical staff and hospital and nursing administrators. All such officials have indicated enthusiastic acceptance of the DTN and her special functions. Another measure of her effectiveness will come when her sponsoring institution and community assume full financial responsibility for her services.

Phasing out of the four original DTN sites: Central office staff have met with the appropriate persons in each of the sponsoring institutions to help plan for the continuation of the local DTN program after project funding is withdrawn. They have found the hospital administrators, nursing directors, et al. most enthusiastic in their desire to maintain the program. Charlotte Memorial Hospital has increased the DTN's employment from 50% to 100% time. In addition, the local Diabetes Chapter has been instrumental in the employment of another nurse, who spends about 75% of her time as a DTN and who is based at the Charlotte Community Health Agency. In the three other sites, indications are that means are being sought for continuation of the program, for example, Haywood County Hospital (employing a DTN 100% time) expects a private contribution to cover one-half the expense.

## III. DEVELOPMENT OF EDUCATIONAL MATERIALS

The preparation of the educational materials described here was in response to request of professional persons working directly with patients in their own communities. They were therefore designed to fulfill the specific needs of the practicing physician, the practicing nurse, and the patient with little or no ability to read. They are, however, also being requested to fulfill other needs as indicated in the following discussion of each of the four major publications.

### 1. Guidelines to Diabetic Management

This booklet is an easy-to-use, inexpensive aid which is currently serving several functions. It is being used by general practitioners in local communities throughout the state as a guide in actual delivery of health care; as a teaching tool for medical students in medical centers in North Carolina as well as in Arkansas, Illinois, Maryland, Michigan and Virginia; and for teaching in special programs, such as the physician assistant program at Duke University.

One thousand copies were printed and a majority have now been distributed.

### 2. Diabetes Mellitus: A Reference for Nurses

The booklet provides the nurse with a ready reference regarding the disease process and points of medical management, along with nursing care of the diabetic. Featured are the "Assessment Guides" which aid the nurse in assessing the patient's performance of his diabetic regimen. Teaching may then be based on the patient's actual needs. The guides may also provide a written record concerning the patient's problem areas so that teaching may be reinforced as appropriate.

Five hundred copies of this booklet were printed. Most of these were distributed with evaluation forms to 174 persons -- 151 nurses and 23 physicians. Eighty-nine nurses (59%) and 12 physicians (52%), representing twenty-two states, returned the forms. All but one of these persons, a physician, said they would recommend the purchase of the book at a reasonable cost. They recommended the book especially for (1) hospital ward reference, (2) hospital in-service education, (3) physicians' offices, (4) hospital libraries, and (5) public health agencies. Forty-seven nurse educators in this group were asked how valuable they considered the book to be as an addition to nursing literature. All considered it to be valuable, and 30% said it was "extremely or vary valuable." Because of the positive comments and the ongoing demand, this booklet is now being revised and a publisher is being sought.

### 3. Select-A-Meal

This pictorial method for teaching the diabetic diet is being developed primarily for persons with little or no reading ability. The Select-A-Meal "folder" is prepared by an instructor (dietitian or nurse) and is given to the patient to take home.

Comments from reviewers indicate that Select-A-Meal appeals to persons regardless of educational level, and that it is especially appealing to children; it may be helpful to non-English reading persons and to those with some loss of visual acuity, as well as to illiterate persons. Comments also indicate probable improvement of patient motivation; increased family participation and understanding; advantages in teaching with the same tool which the patient uses at home; a focal point for specific follow-up; improved communication between patient and professionals, and among members of the health team; durability of the folder and bound-in pages which cannot be easily detached and misplaced, etc. The overall advantage, of course, is simplicity of use from the patient's point of view.

In addition to teaching the diabetic and his family, Select-A-Meal is also being requested to teach dietary and nursing aides.

An instructor field-tesing the materials has prepared Select-A-Meal for orthopedic patients needing weight control. It has also been suggested that the method may be adapted for use with conditions other than diabetes, such as renal impairment and coronary disease.

### 4. H-E-L-P

This attractive cartoon-type picture book presents information concerning insulin administration, urine testing, hypo- and hyperglycemia and foot care. Diet was omitted since this booklet is intended for use in conjunction with Select-A-Meal.

### 5. The Single-Concept Bulletin

It is seen as a means of communicating, on a wide basis, the up-to-date and practical information which professionals can use to improve diabetic care on the local level. The bulletin is distributed monthly to hospitals, nursing homes, public health agencies and nursing schools at their request. One person in the institution or agency accepts the responsibility for handling the bulletins and seeing that they are displayed on strategically-placed bulletin boards. They are not intended for circulation to individual persons.

## IV. ORGANIZATION OF THE NORTH CAROLINA DIABETES ASSOCIATION

The Diabetes Consultation and Education Service, through its physician associates, initiated the formation of the North Carolina Diabetes Association and effected its affiliation with the national organization.

Among the primary interests of the association are the formation and fostering of lay societies throughout the state; the development of an exemplary scientific session in conjunction with the Association's annual meeting; the promotion of the Carolinas Camp for Diabetic Children in collaboration with the Greenville, South Carolina Lay Diabetes Society; and the promotion of diabetes education, research, and services in general. In addition, the Association now proposes to continue the consultative and educative services, developed by the project staff, as federal funding is being phased out.

The following local Chapters have affiliated with the NCDA: Mecklenburg Diabetes Association, Haywood County Diabetes Association, Forsyth County Diabetes Association. The chapters in Raleigh and in Greensboro, are in the process of completing their by-laws. (1970)

## V. BRIEF DESCRIPTIONS OF SOME OTHER PROJECT ACTIVITIES

1. Members of the project staff have served as consultants, panel members, etc., in several programs outside North Carolina. For example, the Associate Project Director for Nursing, Miss Julia D. Watkins, has participated as a speaker in a symposium "Interdisciplinary Approach to Diabetes Management," sponsored in part by the Tennessee Mid-South Regional Medical Program; has consulted with physicians and nurses in the Tennessee Mid-South region regarding a proposal for a diabetes service in that area; and will be a member of a panel to discuss patient education programs at a Seminar on Regional Medical Programs to be sponsored by the American Diabetes Association at its second Allied Health Postgraduate Course in Minneapolis in April 1970.

Several members of the staff have participated in similar programs, including special regional medical program meetings in other areas--Alabama, Pittsburgh, Atlanta, etc.

2. Preparation of papers: Journal articles were prepared and published as follows:

> Williams, T. Franklin, M.D. and Julia D. Watkins, R.N., M.P.H., "Diabetes Consultation and Education Service: A Feasibility Study," North Carolina Medical Journal, Vol. 28, No. 5, May 1967.
>
> Williams, T. Franklin, M.D., "Diabetes Consultation and Education Service: A Progress Report," North Carolina Medical Journal, Vol. 29, No. 7, July 1968.
>
> Watkins, Julia D., R.N., M.P.H., and Fay T. Moss, R.N., M.S., "Confusion in the Management of Diabetes, "American Journal of Nursing, Vol. 69, No. 3, March 1969.
>
> Watkins, Julia D., R.N., M.P.H., "News from the Regional Medical Program," Tar Heel Nurse, June 1969.

In addition, three papers concerning educational materials developed by the project staff have been accepted for presentation at the 1970 convention of the American Nurses Association. After presentation on May 6, 1970, the papers will be included in a book to be published by Appleton-Centruy-Croft.

3. Newsletter: NEWS AND REVIEWS is prepared primarily to promote communication among the widely scattered project staff. While the core staff meets regularly, distance and duties discourage frequent meetings of all staff.

## A. Patient Teaching

Following is a summary of the statistics concerning patient teaching from all DTN sites during the project's two operational years. The information is taken from monthly reports submitted by each DTN.

### ONE-TO-ONE TEACHING

| | MONTHLY AVERAGES | | | Teaching Contacts Via: | | |
|---|---|---|---|---|---|---|
| Period | Number Patients Taught | Number Teaching Contacts | Number Contacts Per Patient | Hospital In-Patients | Out-Patients | In Homes |
| Fiscal 1969 | 93 | 183 | 2.0 | 114 | 61 | 8 |
| Fiscal 1970 | 97 | 242 | 2.5 | 173 | 56 | 13 |

### GROUP TEACHING

| Period | Number Classes Held | Total Attendance |
|---|---|---|
| Fiscal 1969 | 78 | 468 |
| Fiscal 1970* | 9 | 65 |
| Totals: | 87 | 533 |

*See also "Special Programs for Lay persons,"

### PATIENTS ON DIABETES ROSTERS

| Period | Number Pts. new to the Program | Monthly Average | Staff | Private | Not rated on this basis |
|---|---|---|---|---|---|
| Fiscal 1969 | 643 | 53.6 | * | * | * |
| Fiscal 1970 | 601 | 50.1 | 219 | 198 | 184 |
| | 1244 | | | | |

*This information was not collected the first year.

## B. Some Community Resources Used by DTNs during fiscal 1970

Public Health Department
Public Welfare Department
Vocational Rehavilitation
Church Groups
Commission for Blind
Civic Groups
Agricultural Extension Agency
Concentrated Employment Program
Community Education Program
Community Health Association
Mountain Projects
School Personnel

## C. SPECIAL PROGRAMS FOR LAY PERSONS DURING FISCAL 1970

| Program | Number persons served | County/Sponsor |
|---|---|---|
| Film "Diabetes and You, Too" | 5 | Haywood/County Diabetes Association |
| "Food for the Holidays" | 26 | Haywood/County Diabetes Association |
| Diabetes Screening Program | 742 | Jackson/C.J. Harris Hospital |
| Panel Discussion | 100 | Forsyth/County Diabetes Association |
| Blood Sugar Values | 12 | Haywood/County Diabetes Association |
| Insulin and Oral Agents | 10 | Haywood/County Diabetes Association |
| Film "Story of Wendy Hill" | 12 | Haywood/County Diabetes Association |
| Re Camp | 13 | Haywood Elks Auxiliary |
| Panel Discussion | 139 | Wake/Triangle Diabetes Association |
| Characteristics and Treatment; Diet | 65 | Richmond/Hamlet Hospital |
| 10 programs | 1124 | |

## D. Continuing-Education Programs for Professional and Allied Health Groups

Below is a summary of the continuing-education programs carried out during the history of the project. As a matter of record, it is followed by a complete listing of programs which is set up according to the county in which the program was presented. In many cases, of course, attendance was drawn from surrounding counties. It is noteworthy, also, that while programs were prepared for the "target group" indicated, they were usually open to other health personnel. Thus persons from different diciplines, such as pharmacy, physical therapy, dietetics, etc. were often involved.

Summary of Programs for Professional and Allied Health Groups

| | Physicians | | Allied Health | | Total Programs | |
|---|---|---|---|---|---|---|
| Period | Programs | Attend | Programs | Attend | Programs | Attend |
| Feasibility Period | 8 | 122 | 11 | 642 | 19 | 764 |
| Fiscal 1969 | 10 | 173 | 44 | 1362 | 54 | 1535 |
| Fiscal 1970 | 2 | 112 | 43 | 1109 | 45 | 1221 |
| Totals | 20 | 407 | 98 | 3113 | 118 | 3520 |

## E. Educational Programs Carried Out for Professional Persons

| County | Community/Sponsor | No. Programs | Target Group |
|---|---|---|---|
| Buncombe | ASHEVILLE/Health Department | 1 | Nurses |
| Burke | VALDESE/Valdese General Hospital | 1 | Physicians |
| Cabarrus | CONCORD/Cabarrus Memorial Hospital | 2 | Nurses |
| | CONCORD/Cabarrus Memorial Hospital | 1 | Aides |
| Catawba | HICKORY/Health Department | 2 | Nurses |
| Chatham | SILER CITY/Chatham Hospital | 1 | Nurses |
| Cleveland | KINGS MOUNTAIN/Kings Mt. Hospital | 2 | Nurses |
| | KINGS MOUNTAIN/Kings Mt. Hospital | 1 | Aides |
| Columbus | WHITEVILLE/Columbus County Hospital | 1 | Nurses |
| Cumberland | FALCON/Golden Years Nursing Home | 1 | Nurses |
| | FAYETTEVILLE/Highsmith-Rainey Memorial | 1 | Nurses |
| | FAYETTEVILLE/Highsmith-Rainey Memorial | 1 | Aides |
| | FAYETTEVILLE/Cape Fear Valley Hospital | 1 | Nurses |
| Durham | DURHAM/Watts Hospital | 1 | Physicians |
| | DURHAM/Watts Hospital | 6 | Nurses |
| | DURHAM/Duke Hospital | 4 | Nurses |
| | DURHAM/Duke Hosptial | 1 | Physicians |
| | DURHAM/Duke Hospital | 1 | Pharmacy Interns |
| | DURHAM/Lincoln | 1 | Physicians |
| | DURHAM/Lincoln | 4 | Nurses |
| Edgecombe | ROCKY MOUNT/County Medical Society | 1 | Physicians |
| | ROCKY MOUNT/County Medical Society | 1 | Nurses |
| Forsyth | WINSTON-SALEM/N. C. Baptist Hospital | 5 | Nurses |
| | WINSTON-SALEM/N. C. Baptist Hospital | 1 | Physicians |
| | WINSTON-SALEM/District 3 ANA | 1 | Nurses |
| | WINSTON-SALEM/Kate Bitting Hospital | 2 | Nurses |
| | WINSTON-SALEM/Kate Bitting Sch. of Nurs. | 1 | Nurses |
| | WINSTON-SALEM/Forsyth Technical Inst. | 1 | Nurses |
| | WINSTON-SALEM/W-S Dietitians Association | 1 | Dietitians |
| | WINSTON-SALEM/Comprehsnive Health Prog. | 2 | Nurses |
| Guilford | GREENSBORO/Moses H. Cone Memorial H. | 1 | Nurses and Dietitians |
| | GREENSBORO/Guilford County Health Dept. | 3 | Nurses |

| County | Community/Sponsor | No. Program | Target Group |
|---|---|---|---|
| Harnett | LILLINGTON/Adams & Kinton Nursing H. | 1 | Nurses |
| | ERWIN/Good Hope Hospital | 1 | Nurses |
| Johnston | SMITHFIELD/Johnston Memorial Hospital | 1 | Nurses |
| Lee | SANFORD/County Medical Society | 1 | Physicians |
| | SANFORD/County Medical Society | 3 | Nurses |
| Mecklenburg | CHARLOTTE/Charlotte Memorial Hospital | 1 | Physicians |
| | CHARLOTTE/Charlotte Memorial Hospital | 1 | Nurses |
| | CHARLOTTE/Charlotte Memorial Hospital | 1 | Aides & Tech. |
| Nash | NASHVILLE/Health Department | 1 | Nurses |
| New Hanover | WILMINGTON/New Hanover Memorial Hosp. | 1 | Nurses |
| Orange | CHAPEL HILL/N. C.Memorial Hospital | 3 | Nurses |
| Perquimans | HERTFORD/Health Department | 3 | Nurses |
| Person | ROXBORO/County Medical Society | 2 | Physicians |
| | ROXBORO/County Medical Society | 2 | Nurses |
| Pitt | GREENVILLE/County Medical Society | 2 | Nurses |
| | GREENVILLE/Pitt County Health Dept. | 1 | Nurses |
| Richmond | ROCKINGHAM/Richmond Memorial Hospital | 1 | Dietary Personnel |
| | ROCKINGHAM/Richmond Memorial Hospital | 1 | Nurses |
| | ROCKINGHAM/Hamlet Hospital | 2 | Nurses |
| | ROCKINGHAM/Hamlet Hospital | 1 | Aides |
| | ROCKINGHAM/Richmond Memorial Hospital | 1 | Nurses |
| Rockingham | EDEN/Morehead Memorial Hospital | 1 | Aides |
| | EDEN/Morehead Memorial Hospital | 1 | Nurses |
| Rowan-Davie | SALISBURY/County Medical Society | 1 | Physicians |
| | SALISBURY/Rowan Technical Institute | 2 | Nurses |
| | SALISBURY/Rowan Technical Institute | 1 | Aides |
| Surry | MT. AIRY/County Medical Society | 1 | Physicians |
| | MT. AIRY/Martin Memorial School of Nurs. | 2 | Nurses |
| Vance | HENDERSON/Medical Societies of Vance, Warren & Greenville Co. | 1 | Physicians |

| County | Community/Sponsor | No. Programs | Target Group |
|---|---|---|---|
| Wake | RALEIGH/13th District N. C. State Nursing Association and Wake Hospital Systems | 5 | Nurses |
| | RALEIGH/Medicenter | 1 | Nurses |
| | RALEIGH/Dorothea Dix Hospital | 1 | Nurses |
| | RALEIGH/Wake Memorial Hospital | 1 | Nurses |
| | RALEIGH/Wake Chapter of Academy of General Practitioners and Wake Hospital Systems | 1 | Physicians |
| Watauga | BOONE/Health Department | 1 | Nurses |
| In The State of Franklin: | | | |
| Haywood | WAYNESVILLE/State of Franklin Health Council & Haywood County H. | 1 | Physicians |
| | WAYNESVILLE/as above | 1 | Nurses |
| | WAYNESVILLE/Haywood County Hospital | 6 | Nurses |
| | WAYNESVILLE/Haywood County Hospital | 1 | Physicians |
| | WAYNESVILLE/Haywood County Hospital | 1 | Aides |
| | CANTON/Rescue Squad | 1 | Allied Health |
| Jackson | SYLVA/C. J. Harris Community Hospital | 3 | Physicians |
| | SYLVA/C. J. Harris Community Hospital | 1 | Nurses |
| | SYLVA/Jackson County Medical Society | 1 | Physicians |
| | SYLVA/Jackson County Medical Society | 1 | Nurses |
| Swain | BRYSON CITY/Health Department | 1 | Nurses |

## Education and Research in Community Medical Care
Administrative Assistant: Mr. John Payne

1. (A) How many clinics are operating as a result of RMP funding? Where are they?
   (B) How many hours each week is each clinic open?
   (C) Have any aspects of continuation education been part of the clinic programs? Around which topics or problems have they focused? What is the number of physicians and medical students attending the clinic?

The specialty clinics associated with this project are supported by RMP funds strictly for transportation costs. No personnel costs or patient service costs are involved.

There are two specialty services which have five different clinics throughout the state. Three clinics in the Pediatric subspecialties of allergy, cardiology, hematology are operated once a month in the outpatient clinic of the New Hanover Memorial Hospital in Wilmington. Each of these clinics is open approximately four hours per session.

Otolaryngology conducts two clinics a month in Morganton and has one monthly clinic in Tarboro. These clinics are open for five hours each scheduled day.

Hematology and Cardiology have had specific conferences on such topics as sickle cell disease and trait, congenital cardiac anomalies etc.

Allergy and Otolaryngology clinics have a more informal teaching session due to the nature of the cases that are seen and treated.

There are approximately two or three staff physicians for each clinic session. For the clinics in Morganton and Tarboro there are two medical students attending per session.

2. What areas of the state and what categories of professionals did the airplane bring closer together?

Although RMP did not support the transportation in all cases, the airplane has facilitated physician teaching services to outlying areas of the state as well as to the medical school. A thoracic surgeon is flown from Chapel Hill to Wilson each month. An Orthopedist, Obstetricians and general surgeons are brought from New Hanover Memorial Hospital in Wilmington to Chapel Hill to instruct medical students each week. An orthopedic surgeon and brace specialist are flown from Chapel Hill to Elizabeth City, Jacksonville, and Tarboro to provide services to patients in these areas.

3. What proportion of your effort was on rural and on urban places? Explain, citing particular places, estimated number of manhours spent in consultation, education, and patient service?

Morganton and Jacksonville are in semi-rural counties. The remainder of the areas served are urban.

4. What types of postgraduate training and education have been developed at New Hanover Hospital? Approximately how many physicians from the local area have been involved?

Postgraduate training and education at New Hanover Memorial Hospital has taken place in the form of visiting chief programs. These are conducted on a regular basis for house staff.

In addition, the Pediatricians conducting specialty clinics at New Hanover also present case conferences for interested house staff members.

5. (A) What on-going, formal relationships has your project effected since its RMP funding?
   (B) Which of these relationships that your project has initiated will continue after the life of the Regional Medical Program?

Our project has developed a formal ongoing relationship with the Research and Evaluation Division of RMP. The UNC medical school has affiliations with the following hospitals: Charlotte Memorial, Wake Memorial, Moses Cone, New Hanover Memorial, Edgecombe General, Rocky Mount, New Nash General, and High Point Memorial. There are no formal relationships with local medical societies although they have supported our programs.

UNC Medical school has consulted with the State Board of Health, State Board of Mental Health, the Medical Care Commission and the North Carolina Department of Administrative, Office of Comprehensive Health Planning. New Hanover Memorial Hospital and the local Health department have established a firm relationship. We feel that all of these will be lasting bonds.

6. (A) If RMP were to cease funding your project, what would it leave behind? For example, educated people (how many and to what extent), on-going relationships between institutions, equipment?
   (B) What services would have to be continued to maintain the state of affairs your project has brought about. If planning is underway for the support of these efforts, please outline briefly.

The funding of this project has helped establish relationships with hospitals and agencies across the state and has begun programs of continuing education. We feel quite sure these activities will not only continue, but will also expand.

Clinical services outlined in this questionnaire would have to be continued. A proposal has been submitted to support and expand these clinics in the next three years.

7. Has your present system of data collection allowed you to answer these questions relatively easily? If not, how do you plan to change your system of data collection in the future so that your activities will be more effectively documented?

We hope the information we have presented in response to your questionnaire is helpful as well as enlightening. If you have any further questions, please do not hesitate to contact us.

## Gestational Trophoblastic Neoplasia
Project Director: Charles B. Hammond, M.D. and Roy Parker, M.D.

The precise figures for this year have not been collated as of this date nor will they be available by April 1, 1971. Thus the figures for this year are estimated as current to April 1, 1971, but they are based on sound collation of data for the years previously.

1. (A) How many patient physician contacts have there been?
   (B) Where are they from?
   (C) How many assays were performed?
   (D) How many of these patients had a trophoblastic disease?
   (E) Have any deaths resulted from the disease during the therapy?
   (F) How would this compare with a control group of patients not under the diagnostic are and treatment of this program?

   (A) The Center has had patient physician contacts from over 1,000 individuals on at least one occasion. Each of these, however, frequently require multiple contacts in the follow up of each patient by either telephone, letter or patient referral. I would estimate, thus, that from that number of patients, we have had over 10,000 consultations.
   (B) Approximately 40% of these contacts and discussions were with physicians in the state of North Carolina, the remainder from other states in the southeastern United States and occasionally from other areas of the United States and other countries.
   (C) Over 15,000 gonadotropin assays have been performed.
   (D) Over 90% of the patients noted above had some form of trophoblastic disease, usually benign and clearing spontaneously, but the clearing of disease and the avoidance of therapy documented through the use of gonadotropin assays. Approximately 1/5 of these patients, or 200 individuals, had malignant trophoblastic disease.
   (E) There have been eight deaths in the 200 patients with malignant trophoblastic disease and none from the group of patients with either benign disease of non-trophoblastic disease. This thus represents a cure rate of 95 to 96% of patients over half of whom had metastatic disease at the time therapy was initiated and the diagnosis documented.
   (F) It is most difficult to compare a control group of patients not under the diagnostic care and treatment of this program as those data are not obtainable by any method that I know now. I would anticipate that the remission rate under standard forms of therapy without the availability of sufficient assay and without the fairly extensive knowledge of techniques and members of the Center, would approach 50 to 75% versus the 95% noted above.

2. Discuss the regional aspects of your project briefly, i.e. what areas are covered, institutions linked, population, physicians and patients served.

   As trophoblastic malignancies are obviously relatively rare disease, any Center which provides services to numbers of patients such as noted above must draw from a large population base. This has truly been a regional project which has involved the entire state of North Carolina, but in addition many other areas of the southeastern United States. We currently feel that the area that this center serves is primarily North Carolina but includes Washington, D. C., Virginia, West Virginia, Tennessee, South Carolina, Georgia, Florida, Alabama and in limited degree other states. There has been a close linkage between this center and the other medical centers within these regions and approximately half of the patients that are reported in our statistics were actually treated by physicians at those community and state medical centers. During this care the Duke Center provided gonadotropin assays support and essentially weekly or bi-weekly consultation for the interpretation of gonadotropin results and the most efficient and safe methods of therapy. There has been broad contact with the physician population throughout the state and the Southeast in regards to these diseases and a complete list of physicians contacted and assisted is available at the Center. To my knowledge very few patients in these areas are not being treated for these diseases without contact through this center.

3. How had your program reduced the morbidity expense and other problems resulting from these diseases.

This program has reduced the morbidity expense and other problems from these diseases in the methods noted above. Obviously an increased cure rate speaks to the point of morbidity and mortality improvement. Expense has been reduced by centralization and accurate assay which does not require obvious repetition for documentation of accurate results.

4. (A) What on-going, formal relationships has your project effected since its RMP funding?
   (B) Which of these relationships that your project has initiated will continue after the life of the Regional Medical Program?

(A) This center has attempted to develop rather extensive relationships since its RMP funcing. With the Regional Medical Program its support through the radioimmunoassay grant has lead to the development of new efficient method for HCG determination. It is currently being considered for incorporation into the comprehensive cancer program and is being considered for funding for an additional program.

The Center has had contact with essentially every medical school and every major local hospital in the state of North Carolina and in the southeastern United States. There are only rare exceptions to this in the delivery of health care to the populus. In addition, there has been significant input into the teaching programs of these services both by consultation and through participation in educational programs.

Members of the Center have spoken at almost all of the medical schools in the regions noted and at local medical society meetings frequently throughout the areas. A complete listing of these visits and consultations are available at the Center.

The Center has had obvious liaison roles between medical schools and state agencies in the support and therapy administered to these patients. The North Carolina State Health agencies have provided considerable assistance in the support of indigents of this state in therapy and other states are performing in similar manners.

(B) It is anticipated that all of these relationships will continue after the life of the regional medical program as they are not contingent upon Regional Medical Program funding but were stimulated by it. As we anticipate the Center will continue in some fashion and that the life and function of the Center are based upon these interrelationships, I do not anticipate that they will decline, but only increase.

5. (A) If RMP were to cease funding your project, what would it leave behind? For example, educated people (how many and to what extent), on-going relationships between institutions, equipment?

(B) What services would have to be continued to maintain the state of affairs your project has brought about. If planning is underway for the support of these efforts, please outline briefly.

(A) If the Regional Medical Program were to cease funding of the project it would leave behind a considerably greater populus of physicians, nurses and practitioners who are educated as to the vagaries of malignant trophoblastic disease and to its therapy. It would also leave behind the complete equipment for a centralized gonadotropin assay facility. It would obviously leave behind the staff of the Center who are capable and functioning in a consultative role for patients with these diseases. The ongoing relationships that exists between institutions and the Center would be maintained. Obviously, the lack of funding, would create a significant handicap in the continuation of the project in its fullest extent.

(B) Primary services which would have to be continued to maintain the state of affairs that this project has brought about would be primarily the funding of the manpower to continue the center. Without some additional method of funding, the Department of Obstetrics and Gynecology at Duke could not long continue this activity of this magnitude. Despite the fact that the department is continuing to put significant funds into the project it does require additional funds to support it. A grant is currently pending with the Regional Medical Programs for three years to allow its continuation and expansion. Other multiple applications have been filed for support from other areas, but due to the severe curtailment in health funding, little support is anticipated from these. Finally, if no support is obtainable, the Department will continue to support the project at a reduced level of service and the service for assays will be charged as required.

6. Has your present system of data collection allowed you to answer these questions relatively easily? If not, how do you plan to change your system of data collection in the future so that your activities will be more effectively documented?

The present system of data collection has allowed me to answer these questions relatively effectively I think and easily. The topics under Item 4-A are difficult to answer with concrete statements. To be frank, I find it difficult to know the precise answer that you are seeking as they apply to this particular project. I would not anticipate there would be any significant change in our system of data collection for future documentation of activity.

## Hypertension Project
Project Director: James W. Woods, M. D.

1. (A) Document where teaching seminars have been held, how many physicians, nurses, and other medical personnel have attended each seminar, and how many hours of training were given each seminar.
   (B) What has been the impact of the teaching materials prepared for this project, when used at UNC, on medical students, pharmacy students, nursing students and R.N.'s, public health students, practicing physicians, interns, residents and fellows?

(A)

| WHERE | M.D.'s | NURSES | HOURS |
|---|---|---|---|
| Washington, N. C. | 30 | | 2 |
| New Bern | 37 | | 2 |
| Kannapolis | 52 | | 2 |
| Wilson | 17 | | 4 |
| Tarboro | 15 | | 2 |
| Charlotte | 150 | | 3 |
| Greenville, N. C. | 22 | | 6 |
| Ashville | 14 | | 6 |
| Hickory | 38 | | 2 |
| Salisbury | 46 | | 2 |
| Rocky Mount | 25 | | 2 |
| Durham | 18 | | 2 |
| Kinston | 16 | | 6 |
| Elizabeth City | 22 | | 2 |
| Goldsboro | 12 | | 2 |
| Lenoir | 20 | | 2 |
| High Point | 94 | | 2 |
| Waynesville | 14 | | 5 |
| Gastonia | 51 | | 2 |
| Wilmington | 12 | 50 | 2 |
| Morganton | 15 | | 2 |
| Greensboro | 27 | | 4 |
| Charlotte | 14 | | 4 |
| Totals | 761 | 50 | 68 hours |

(B) There has been heavy use of some of the materials--particularly the compact study plan and the references by medical students, interns, residents and attending staff. We keep a supply of mimeographed copies and there is a steady demand for these. While I have spoken with pharmacy, public health and nursing students about aspects of hypertension, they do not utilize the materials to the same extent since they are not engaged in the care of patients.

2. As a result of your project how many patients have been referred to either the Clinic or for admission to the hospital?

As a result of out project the following numbers of patients have been seen in the Hypertension Clinic:

1968: 119 patients
1969: 273 patients
1970: 615 patients (96 new and 519 returns)
(The potential of the Clinic was greater than this figure in 1970 indicates because there were 181 patients scheduled for appointments who did not show up for them)

As a result of our project the following numbers of patients have been seen on consultation while in North Carolina Memorial Hospital:

1968: 72
1969: 104
1970: 133

3. (A) How many hypertensive patients have been brought to N. C. Memorial Hospital and put under the surveillance system?
(B) Have you any data to suggest that these patients get better care and "do better" than patients not under this surveillance?

(A) This question is ambiguous. Early in the Project we had a surveillance system for bring hypertensive patients to our attention. More recently and due to the impact of the Hypertension Project, the Medical Service follows our plan of diagnostic study and management while most patients on other services with hypertension are seen by our group in consultation. Therefore, there is at present, little need for a surveillance system.

(B) See A. It would be difficult to document that patients receive better care now than they did prior to 3 years ago, but we are convinced that they do. There is uniformity in the diagnostic and management approach and the N. C. Memorial Hospital staff take a positive approach to the disease--this was not true formerly.

4. Estimate the cost, in days and dollars, saved by a shortened diagnostic evaluation. On what proportion of the patients, is the new evaluation done?

The diagnostic study plan which we have streamlined has eliminated approximately three days from the average admission. On September 18, 1968 a hypertensive patient was admitted for a diagnostic work-up which required a nine-day admission costing $699.50 whereas on January 21, 1969 another hypertensive patient was admitted for the identical work-up which required a four-day admission costing $432.50. Today by pre-scheduling the necessary procedures most hypertensive work-ups require a three day admission. This new eveluation is carried out on 80-90 percent of our patients (estimated).

5. What is the average number of patients seen at the weekly Hypertension Clinic?

Approximately 11 or 12 patients are seen in the Hypertension Clinic each week.

6. What impact did the Hypertension Laboratory have on the treatment of hypertension?

The Hypertension Laboratory makes certain diagnostic tests (urinary metanephrine, peripheral plasma renin activity, renal vein renin activity) available to our patients and has greatly facilitated the search for potentially curable forms of hypertension.

7. (A) What on-going, formal relationships has your project effected since its RMP funding?
(B) Which of these relationships that your project has initiated will continue after the life of the Regional Medical Program?

No formal relationships have been effected by this Project since its RMP funding.

8. (A) If RMP were to cease funding your project, what would it leave behind? For example, educated people (how many and to what extent), on-going relationships between institutions, equipment?
(B) What services would have to be continued to maintain the state of affairs your project has brought about. If planning is underway for the support of these efforts, please outline briefly.

(A) This Project will not be funded by RMP after June 30, 1971. It will leave behind: 1) A Hypertension Laboratory which is largely self-supporting; 2) A Hypertension Clinic with a sizeable and growing clientele, three physicians plus medical students who work there, and three nurses specially trained to care for these patients. These nurses will soon be trained to the point where they will furnish continuing care for certain patients who will be seen by physicians only when there are problems or for annual re-evaluation; and 3) About 800 physicians in the State who we hope are delivering more modern care to their patients as a result of the post-graduate teaching effort.

9. Discuss any important aspects of your project which have not been asked about.

The Project Director has traveled 5303 air miles about the State in two years conducting the Hypertension Seminars. These have been enthusiastically received and a relationship will continue with the participants. We frequently receive questions and problem presentations by telephone, by letter, x-rays by mail for advice and referrals because of the Project. We think that patient hospital days are being saved in many community hospitals by the abbreviated study plan and that patients may be receiving better care. (We hope that the latter statement is not overly optimistic.) A questionnaire will shortly be mailed to Seminar participants. If there is a good return, there may be a more tangible measurement of impact.

10. Has your present system of data collection allowed you to answer these questions relatively easily. If not, how do you plan to change your system of data collection in the future so that your activities will be more effectively documented.

Our present system of data collection has allowed us to answer these questions with relative ease. The North Carolina Memorial Hospital has computerized its clinic visit data in the last two years which has been an enormous help to us. We would have liked to determine from which counties our patients have come in the last 2-3 years since hypertension in North Carolina is more prevalent in certain counties but the cost of having a program run for this was too great.

Much remains to be done. To quote a recent editorial in the New England Journal of Medicine, "since there are few risk factors in cardiovascular disease that are more easily detected and readily controllable, essential hypertension more than any other factor deserves attention from those concerned with prophylaxis against the major cardiovascular killers."

## Innovations in Clinic Nursing
Project Director, Dr. Susanna Chase

In answering all of these questions unless otherwise indicated, the replies are based on the first offering (1969-70) of the course. Data similar to this will be available for the second group of nurses and second course early in May 1971.

1. (A) How many courses, "Innovations in Clinic Nursing", have been given?
   (B) How many students attended each one?
   (C) Where are the students from?

   (A) One course has been completed. One is now in progress - to be completed April 1971.
   (B) First course 1969-70 - 32 attended and 27 completed the course. Second course 1970-71 - 28 participants.
   (C) First course - 30 from North Carolina; 2 from West Virginia by special arrangement
   Second course - 28 from North Carolina
   see map.

2. (A) How did the students rate in acquiring the knowledge, understanding and nursing competencies necessary to use the innovations?
   (B) How did they rate in the application of these new concepts as they relate to personnel, patients, and practices?

   (A) The first (1969-70) course was evaluated using the following mechanism: self-evaluation; changes in practice; analyses of (1) geographic distribution, (2) employing agencies, (3) relation to community activities and organizations as well as other health-care agencies; and innovations the nurse has introduced into her daily practice.

Students' Self-Evaluation - written and verbal

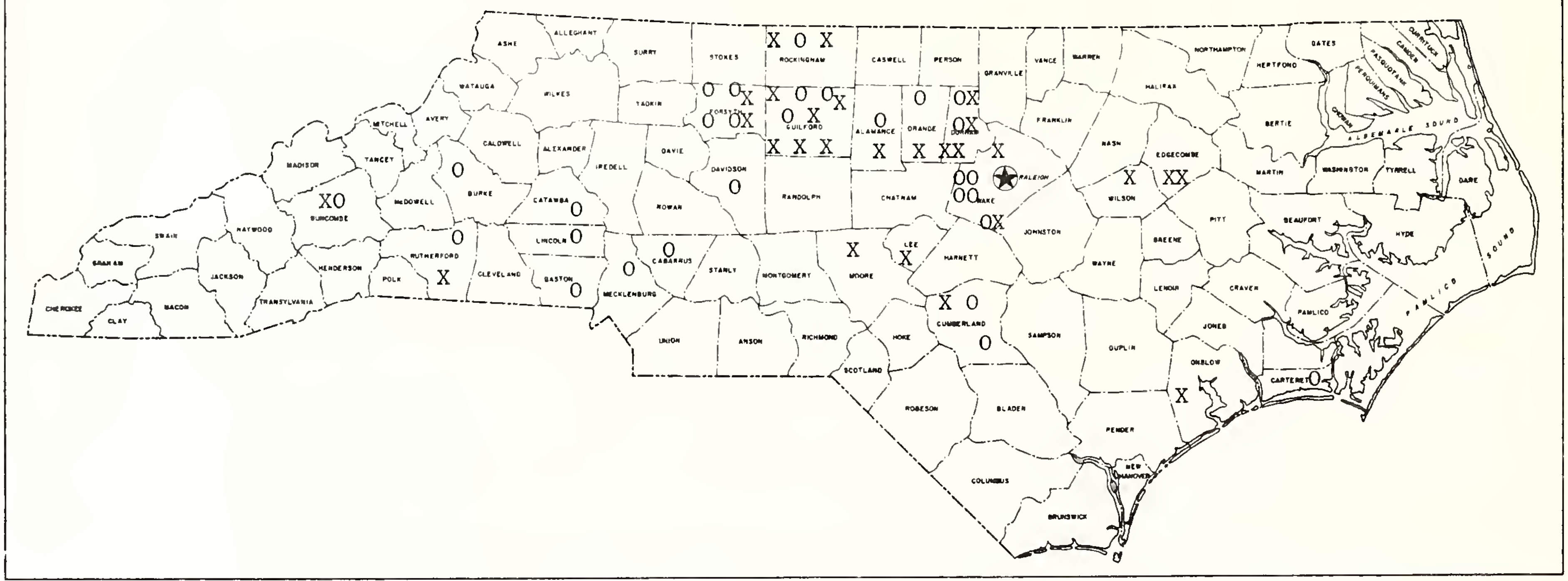
To measure general satisfaction with the course, a scale developed by Kropp-Verner was used. Scores may range from 1 to 11, with lower scores indicating higher satisfaction. The score for this course was 4.3. In the two years we have been using this measure, only two courses have scored higher satisfaction, 4.1 and 4.0. Verbal feedback bore out a high degree of satisfaction.

On an evaluation form aimed specifically toward the objectives, all nurse-students reported that they had refocused on the patient and his needs; all increased their understanding of problems in their home situation; 24 gained ideas for coping with change in home setting; 28 identified new helpful resources.

All gained understanding of: the changes in society and changes in the role of many health professionals; the increased demand of the consumer for better medical care; the shortage of health care workers and facilities; and the financing of medical care.

NORTH CAROLINA

Location of nurse-students enrolled in course: Innovations in Clinic Nursing, October, 1969 and March 1970; and November 1970 and April 1971



O--One dot represents one nurse-student in first course, Oct. 1969 and March 1970. Total enrollment 30

X--Represents one nurse-student in second course, Nov. 1970 and April 1971. Total enrollment 28

Twenty-six of the twenty-seven nurse-students identified the learning experience in interpersonal relations as being among the most helpful of the course. They felt they had improved their skill in working with people and would therefore be able to use personnel in more efficient ways, do better patient teaching and make more efficient use of all their contacts with patients and colleagues.

On the final evaluation of the course we asked these nurses what they felt would be the impact of this course on the health of North Carolinian Selected responses are as follows:

> "With the projects in progress that the members of the class have initiated there should be obvious improvement in clinic areas in time saving measures for clinic patients, more "personal" care obvious in clinics. Also the various clinic supervisors will become more alert to the needs for changes in their clinics and help improve present situations that need revision thus helping future progress in patient care areas."
>
> "I feel it has made the persons in this course stop and look at how they are affecting the situation they are working in and evaluate the things that would improve the care given to the patients that enter their field of practice."
>
> "It will give us as nurses a better insight into the innovations in clinic nursing. Therefore, we should be able to give better nursing care to our patients by applying what we have learned here."
>
> "This depends on how each individual will apply and utilize what they have gained from the course and apply it in their home situation. Personally I feel that nurses with an open mind can take back to thei other employees numerous ideas and suggestions in order to improve problem areas and continuity of patient care."
>
> "It could have a far reaching effect as several nurses from different institutions are reached. They will go home and certainly have some influence on their co-workers and patients."

(B) Changes in Practice

As reported under self-evaluation, 26 of the 27 nurse-students rated the learning experiences in interpersonal relations and communication very high. There was particular emphasis on management aspects of both personnel and patient care. In an effort to determine if the nurse-student felt she made changes, each was asked to rate herself in areas of interpersonal behaviour on a scale at the beginning of the course and at the end. Twenty-two of the twenty-seven recognized positive changes in themselves. To determine if changes were apparent to co-workers in the home setting, this same scale was distributed by the nurse-student to four of her colleagues (physicians, supervisors, peers or other personnel working in the clinic). These were checked anonymously and returned directly to the School of Nursing. An analysis of those scales returned (total 102 of a possible 108) revealed that twenty-four of the twenty-sev nurses were seen by at least two colleagues as having shown positive chan

Application of the new concepts may be seen as well in each of the independent projects. The Appendix (not included in this report) includes a summary of each of the projects undertaken by the students in the course during the first year.

3. (A) What on-going, formal relationships has your project effected since its RMP funding?
   (B) Which of these relationships that your project has initiated will continue after the life of the Regional Medical Program?

(A) Our NCRMP project, the offering of a single course once each year for two years, has lead to a formal relationship with the funding agency. Certainly, we hope to continue a relationship with the NCRMP. All other relationships have been informal.

(B) The School of Nursing is well known throughout the State for its educational services to the practicing nurse. To offer this service, the School and the Continuing Education Program within it have many informal relationships established all over the State. By offering the course, "Innovations in Clinic Nursing", many of these relations have been reaffirmed. It does not make sense to attribute these relationships with hospitals, health departments, voluntary health agencies other universities and divisions within this University, to this one course, since such relationships were established prior to this project, they contributed to the success of this project and they will continue for other projects and courses which the School undertakes.

4. (A) If RMP were to cease funding your project, what would it leave behind? For example, educated people (how many and to what extent), on-going relationships between institutions, equipment?
   (B) What services would have to be continued to maintain the state of affairs your project has brought about. If planning is underway for the support of these efforts, please outline briefly.

(A) The project leaves behind 27 nurses who see 2890 patients per day as well and 695 other personnel in positions ranging from physician to janitor. Though this tabulation has not been completed for the second group of 28 nurses, it is assumed that the numbers will be similar.

The 60 nurses in both courses have grasped the ideas of the expanded role of the nurse and its importance in the delivery of health care to ambulatory patients, increased skill in nursing assessment, have interest in meeting the nursing needs of the patients and more skill in utilization of personnel. Most importantly, the majority of these nurses are highly motivated to improve health care of patients, based on their increased understanding of changes in our society.

The project did not include any equipment.

(B) The nurses involved in this course are at the staff level. Financial assistance for both instruction and living expenses would be necessary to continue offering the course for nurses of this level of employment.

The School of Nursing is constantly seeking money for the support of both students and instruction for a variety of courses relating to a variety of educational needs of the practicing nurse. Because of the poor response among practicing nurses and their employers, this course, "Innovations in Clinic Nursing", does not have high priority within the continuing education offering.

5. Discuss any aspects of your project that have not been asked about.

The bulk of this report is based upon the first offering of this course. We anticipate submitting additional information at the conclusion of the second course.

During 1969-70 the NCRMP provided funds which made it possible for half of the instructional costs to be met ($5940) and it provided funds for the students who were enrolled to be reimbursed for board and room while attending the course ($3636). There was $4924 of the NCRMP award returned to NCRMP at the end of the year. This money was appropriated for the enrollees' per diem expense but was not used.

For the second year NCRMP awarded $2250 for instruction and $12,250 for student travel (mileage and perdiem). The School of Nursing has made James M. Johnston Awards of $100 for tuition to each student enrolled in the second course. Without this additional money for the cost of instruction, the course could not have been offered this second year. There will be money reverting to NCRMP this second year due to low enrollment in the course and the restriction placed by RMP on the use of the money awarded.

The 32 nurses who enrolled in the first offering of the course, "Innovations in Clinic Nursing", were from the following types of agencies: 9 general hospitals, 1 mental hospital, 9 health departments, 2 mental health centers, and 1 health center association. They staffed the following clinics: cardiac, CVA, cancer, comprehensive stroke, diabetic, TB, arthritis, endocrine, allergy, chest, hemotology, child health supervision, planned parenthood, neurology, dermatology, ENT, orthopedic, surgical, immunization, urology, birth defects, DEC, veneral disease. Nearly all of these clinics deal with patients whose condition is related in some way to heart disease, cancer, or stroke.

6. Has your present system of data collection allowed you to answer these questions relatively easily? If not, how do you plan to change your system of data collection in the future so that your activities will be more effectively documented?

Yes, relatively easy.

Because this project was not funded for a third year, we do not anticipat revising our data collection system. However, it does appear that either your review questions need to be revised to better fit our project, or conversely, our project needs to be revised so that it fits your question

Medical Library Extension Service
Project Director: Mr. Cavanaugh

1. What types of consultation were given to the other libraries? To which libraries?

Several hospitals have been given advice on establishing and organizing hospital libraries by the staff of the supporting libraries. We have also advised other libraries on problems of classification, cataloging, journal organization, ordering, binding, disposal of unwanted materials, etc. Bowman-Gray and the University of North Carolina Health Sciences libraries have helped train several hospital librarians by allowing them to spend several days at those libraries working with their staff members. Some of the libraries which have been helped through consultation are:

Buncombe County Medical Society Library--Asheville
Alcoholic Rehabilitation Center Library--Black Mountain
Murdoch Library, John Umstead Hospital--Butner
Chowan Hospital, Medical Library--Edenton
Cape Fear Valley Hospital--Fayetteville
Highsmith Rainey Memorial Hospital--Fayetteville
Cherry Hospital Medical Library--Goldsboro
Health Affairs Library, ECU--Greenville
Richard Baker Hospital Medical Library--Hickory
Lenoir Memorial Hospital Medical Library--Kinston
Catawba Memorial Hospital Medical Library--Newton
Moore Memorial Hospital Medical Library--Pinehurst
Beaufort County Hospital--Washington
New Hanover Memorial Hospital Medical Library--Wilmington
Reynolds Memorial Hospital Medical Library--Winston Salem

We cannot name all libraries such advice has been given to because the NCU-H and Bowman Gray Libraries do not always report to us when they have provided this service.

2. (A) How many and what types of reference problems were handled?
   (B) For which libraries or individuals (that is, physicians, nurses, etc.) were they?

   (A) Reference problems handled varied from the simple, quickly answered questions to lengthy, involved bibliographical searches. We have sent several search requests to the National Library of Medicine for MEDLARS computer searches and in addition, a total of 38 searches were submitted by Duke to the AIM-TWX National Library of Medicine experiment in November 1970. (Bowman Gray also participated in this experiment, but we have no figures on the number of searches they submitted for North Carolina physicians.)
   (B) A complete list not available.

3. (A) How many loans were made to individuals and to libraries?
   (B) Which were the borrowing libraries and whom did they borrow from?
   (C) What is the geographical distribution of the borrowing physician or individual and of the library from which he borrowed?

(A) 4,409 request from individuals
5,747 request from libraries.
(B) See attached map.

4. (A) How many workshops were held?
(B) For how many days?
(C) When?
(D) Where?
(E) Who attended?

(A) 3 workshops.
(B) 1 day each.
(C) December 5, 1968 - 2 workshops
April 30, 1969 - 1 workshop.
(D) V. A. Hospital, Durham
Western Piedmont Community College, Morganton
New Hanover Memorial Hospital, Wilmington.

5. Are physicians ready to use the extension system more readily now, due to publicity and to its use in the first years, than at its inception?

Although the number of interlibrary loan requests is leveling off, the number of reference requests seems to be increasing and the usefulness of the service is gradually being recognized by the medical community. During the last eight months, approximately 83 such requests have been answered at Duke as compared with 76 for the previous year. We have received numerous comments from physicians thanking us for the service and stating that it has been very helpful to them.

6. Have local libraries improved as a result of the extension service? How?

Yes, we feel local hospital libraries have improved as a result of the Extension Library Service. Many have improved directly through consultati and advice of our staff and through the provision of needed duplicate materials from our files. Others have improved indirectly through the attendance of a staff member at a workshop and/or through the provision of services and advice of the Extension Library Service as a whole. The local libraries can now "extend" their service through use of the Extension Library Service.

7. What special services have been provided to libraries and to individuals?

The services provided are not actually "special" because they are the routine library services provided by most large medical center libraries, but they might be considered special to the physician and hospital library removed from large medical centers. The services provided include interlibrary loans (provision of books or journal articles upon request to libraries and/or individuals), reference and bibliographic services, consultation and advice on hospital library service, duplicate journal files, occasional workshops, newsletter, North Carolina Union List of Bio-Medical Serials (2 editions).

8. What was the result of sending out duplicate journal files?

Many libraries have used the duplicate journal service and all have indicated they were very pleased with the results. More than 2000 issues/volumes have been supplied.

9. (A) What on-going, formal relationships has your project effected since its RMP funding?
(B) Which of these relationships that your project has initiated will continue after the life of the Regional Medical Program?

(A) Not applicable???
(B) Unknown at this time. We may continue to offer a limited service on a fee basis but it is doubtful that any of the supporting libraries can continue to offer extension services unless other funds become available, and doubtful that the individual physician's desire for information will continue at the same level under a fee-for-service system.

10. (A) If RMP were to cease funding your project, what would it leave behind? For example, educated people (how many and to what extent), on-going relationships between institutions, equipment?
(B) What services would have to be continued to maintain the state of affairs your project has brought about. If planning is underway for the support of these efforts, please outline briefly.

(A) ? (none)
Equipment - 2 desks, 3 chairs, 2 file cabnets.

(B) All the services presently offered would have to continue. No formal plans have been made to provide for the service of RMP funding were to cease.

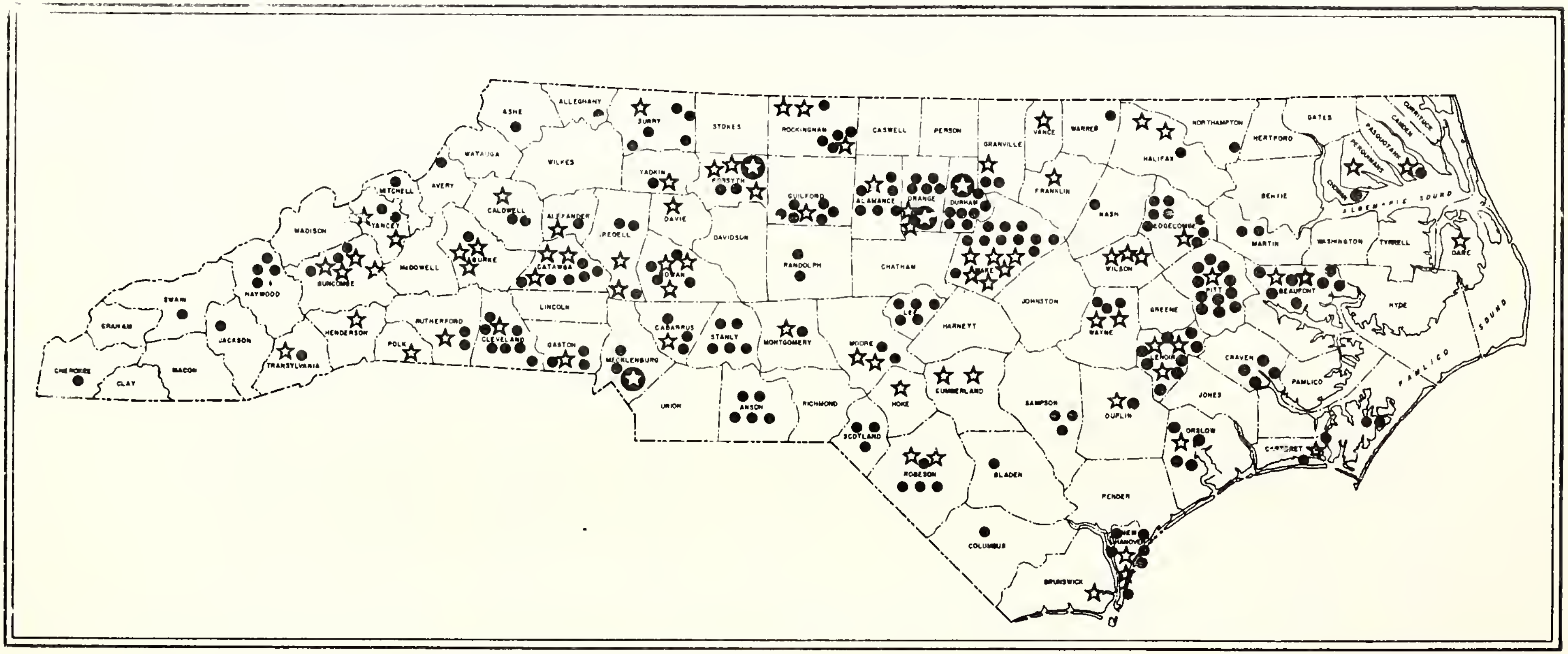
11. What further activities do you feel that RMP should undertake or underwrite the area of health library services?

Funds to provide assistance in acquiring materials for small hospital libraries. More publicity to make the physicians and health personnel aware of the service. Possibly a Current Awareness Program on a limited scale. Enough staff to extend the present services and promote workshops, training, publicity, etc.

12. Has your present system of data collection allowed you to answer these questions relatively easily. If not, how do you plan to change your system of data collection in the future so that your activities will be more effectively documented?

Most of the questions that were applicable could be answered from our present method of data collection.

MEDICAL LIBRARY EXTENSION SERVICE: SUPPORTING LIBRARIES, HOSPITAL LIBRARIES USING THE SERVICE, AND INDIVIDUALS USING THE SERVICE



Supporting Libraries

Hospital Libraries Using the Service

Individuals Using the Service

Evaluation of Mobile Coronary Care Ambulance
RMP'S Operational Project Grant
From date RMP'S Grant authorized to June 30, 1970

I. General Information

A. Sponsoring Institution --Bowman Gray School of Medicine

B. Project Director--Ralph N. Feichter, M.D., Ernest Goodwin, M.D.

C. Service area of Mobile Coronary Care Unit

1. Number of hospitals to which patients are customarily transported by Mobile CCU--One (Haywood County Hospital)

2. Square miles covered by service--546

3. Estimated population residing or working in area served--39711

D. Date RMP'S grant authorized--4/1/68

E. Date Mobile CCU began operating--11/1/68

II. Operating procedures

A. Hours Mobile CCU scheduled for service
(Show initial schedule and subsequent changes thru June 30, 1970)

| Dates | | Number of |
|---|---|---|
| From | To | hours per week |
| 11/1/68 | 6/30/69 | 168 |

B. Under the most current protocol of standard operating procedure, who is privileged to call the Mobile CCU? (Check one)

/XX/ Anyone

/__/ Physicians only

/__/ Other groups (Specify)________________________

III. Fiscal Data through June 30, 1970

A. First fiscal year actual expenditures, from--4/1/68 to 6/30/69

(From date RMP'S grant authorized to end of first fiscal year or June 30, 1970, whichever is earlier)

| Item of expense | Estimated allocation of total expenditures |
|---|---|
| | Before initiation of services<br>RMP'S Funds--1 |
| 1. Personnel--2 | 0 |
| 2. Training of personnel--2 | |
| 3. Equipment | |
| a. Special equipment--3 | 12,118 |
| b. Ambulance vehicle | |
| c. Ambulance equipment | |
| d. Other equipment | |
| 4. Supplies | 204 |
| 5. Other direct costs--4 | 568 |
| 6. Indirect costs | 0 |
| TOTAL | 12,890 |

1. Include estimated value of all services, equipment, etc., donated to the MCCU project.
2. Include all services paid for either directly or by subcontract.
3. Include ECG, defibrillator, mechanical CPA, telemetry, and voice communication equipment.
4. Include consultant services for other than training of personnel.

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*Although no other specific monies were involved, services in kind were donat which would be very difficult to separate out. They include:

a) 90 hours of training time by physicians to the Haywood County Rescue Squa
b) 24 hour physician supervision of the Haywood County Rescue Squad.
c) Teams of three volunteer Rescue Squad members on duty 24 hours per day.
d) Vehicle which was also in use for routine emergency use.

B. Second fiscal year actual expenditures, from--7/1/69 to 6/30/70--NONE.

C. Third fiscal year actual expenditures, from--7/1/70 to 6/30/71--NONE.

IV. Operating Problems

A. Describe difficulties with:

1. Vehicle--NONE

2. Electronic equipment--NONE

3. Other special equipment--NONE

4. Personnel--NONE

V. Operational Statistics through June 30, 1970
Statistics cover period from 7/1/60 -- 6/30/70

| | Fiscal Year First--5 |
|---|---|
| A. Number of call answered | 113 |
| 1. Number of calls cancelled en route | 0 |
| 2. Number of arrivals on scene | 113 |
| a. Number of individuals not transported to hospital by Mobile CCU | 13 |
| (1) Dead on arrival of Mobile CCU | 13 |
| (2) Died at scene after arrival | 0 |
| (3) No need to hospitalize | 0 |
| (4) Transported to hospital by other than Mobile CCU | 0 |
| (5) Other reasons | 0 |
| b. Number of individuals transported to hospital by Mobile CCU | 100 |
| (1) Died en route | 0 |
| (2) Arrived at hospital alive | 100 |
| (a) Died in emergency room | 1 |
| (b) Discharge from ER (not requiring hospitalization) | 7 |
| (c) Hospitalized | 92 |
| (1a) Admitted to CCU | 62 |
| (1b) Admitted to ICU | 5 |
| (1c) Admitted to other hospital bed | 25 |
| B. Total Hospitalized (Same as (c) above) | 92 |
| Principal discharge diagnosis: | |
| 1. Myocardial infarction | 25 |
| 2. Other coronary disease | 17 |
| 3. Stroke | 6 |
| 4. Other cardiovascular disease | 21 |
| 5. Non-cardiovascular disease | 23 |
| 6. Discharge diagnosis not known | 0 |
| 7. Still in hospital | 0 |

*Note: The number of calls answered by ambulance in which physician was at scene or arrived shortly thereafter

VI. Therapy Statistics through June 30, 1970

Note: Those obviously dead at time of ambulance arrival were not treated or counted below.

|  |  | Fiscal Year First--5 |
|---|---|---|
| A. Number of individuals who received CPR and one or more defibrillations | Total | 0 |
| 1. Reached hospital alive |  |  |
| 2. Died before reaching hospital |  |  |
| B. Number of individuals who received CPR only | Total | 3 |
| 1. Reached hospital alive |  | 3 |
| 2. Died before reaching hospital |  | 0 |
| C. Number of individuals who received one or more defibrillations without CPR | Total | 0 |
| 1. Reached hospital alive |  | 0 |
| 2. Died before reaching hospital |  | 0 |
| D. Number of individuals who received CPR and/or one or more defibrillations and who reached hospital alive. (Sum of lines A-1, B-1, and C-1) | Total | 3 |
| 1. Died in Emergency Room |  | 1 |
| 2. Died in hospital |  | 0 |
| 3. Discharged from hospital alive |  | 2 |
| E. Number of individuals who received medications | Total | 16 |
| 1. For disturbances of rhythm |  | 5 |
| 2. For discomfort or pain |  | 13 |
| 3. For acidosis |  | 3 |
| 4. For anxiety |  | 0 |

Our Conslusions

Of those who were not sudden deaths, there were suprisingly few problems enroute to the hospital.

VII. Observations on beneficial effects other than individual therapy resulting from the existance of the Mobile CCU. (Briefly list events such as (1) activities by other organizations, (2) problems the medical community became aware of, (3) upgrading of medical or hospital services, (4) talks, seminars, or training sessions, (5) public education programs, etc.)

A. Community involvement and education through the use and training of rescue squad members. These volunteers act as interpretors of the program to the community. It is felt that this has led to greater utilization of the service and some breakdown in patient delay in calling for the Mobile CCU.

B. The medical community has been made aware of the need for immediate monitoring and treatment of heart attack patients through the use of the Mobile CCU as an adjunct of the coronary and intensive care units. This has led to more use of drug therapy before hospital arrival.

C. Local pride has been encouraged by the knowledge the community has at its disposal superior cardiac services. Some of the manifested interest has been encouraged through local newspaper editorials, and talks to local civic organizations such as Kawanis and Rotary.

D. Because of the unique cardiac care duties performed by the Haywood County Rescue Squad, this organization was asked to conduct a seminar on mobile cardiac care to the Southeastern Rescue Squad Association. As a result there has been much interest shown by other rescue squads in initiating this cardiac function in their communities.

E. Request by doctors and hospitals outside of Haywood County for use of the equipment for persons who could not be transfered otherwise to regional medical centers has been met in at least two instances. Cooperation and sharing of scarce resources therefore may have been initiated where none existed before.

Prepared by:
Ralph N. Feichter, M.D., Oct. 26, 1970

## Tumor Tissue Registry
## Project Director: Herbert Z. Lund, M.D.

1. How many slides were distributed to how many physician?

6,300 slides distributed to at least 85 physicians.

2. What collaboration has taken place between your project and the central tumor registry and the cancer information service?

Very little collaboration between this project and the central tumor registry and the cancer information service because our consultative function has proved to be ineffective. Originally we intended the Registry to have a consultative as well as an educational function. This soon proved ineffective because we depended on part-time technical and secretarial help not available on a daily basis and could not give prompt service.

3. What is the status of your efforts to establish a tumor tissue reposito

4. Has tumor material index and catalog been developed? If so, how is it being used?

3. & 4. A repository is developing of unusual and difficult material. It is necessarily small. As yet it has not been well indexed and catalogued. We anticipate cataloguing the cases we have by July 1, 1971.

5. (A) Has the fostering of small local study groups been feasible?
(B) If so, where?
(C) If not, what were the obstacles?

(A, B, & C) Fostering of small study groups was unnecessary. One reason for suggesting study groups was the feeling that we would not have adequate material to distribute to individuals and therefore the need for group sharing. We found, however, that in a vast majority of cases we could distribute slides to everyone, permitting him to study the cases at leisure and to keep the slides permanently for future referenc

6. How has the project been involved in residency training in oncology?

At UNC School of Medicine, V.A. Hospital in Durham, and notably Duke University Medical Center slides are used in teaching residents.

7. Has project activity been coordinated with any nationwide program of tissue registration?

No

8. (A) What on-going formal relationships has your project effected since its RMP funding?
(B) Which of these relationships that your project has initiated will continue after the life of the Regional Medical Program?

(A) There have been no new relationships with other groups since the RMP funding. Our dealing is mostly with individual pathologists and their associates. Where residents are part of a pathologists' staff they have had the opportunity to examine and discuss the material with the pathologist. Our project is closely linked with the Pathology Division of the Medical Society of the State of North Carolina. Most of the participants belong to it (except for out-of-state participants). We presented a seminar of CNS tumors at the annual meeting at Pinehurst in May, 1970. Our Consulting Pannel is drawn from that Society. We are encouraged and advised by that Society.

(B) It is my hope that the Tissue Registry will continue after RMP funding has ceased by either to two means: (1) Voluntary participation by members of the Division of Pathology. This would be a rotation of assignments to distribute interesting cases from a pathologist's own material to all members of the Pathology Division. The activity would be a function of the State Society. (2) Continuation by one of the teaching institutions.

9. (A) If RMP were to cease funding your project, what would it leave behind? For example, educated people (how many and to what extent), on-going relationships between institutions, equipment?

(B) What services would have to be continued to maintain the state of affairs your project has brought about. If planning is underway for the support of these efforts, please outline briefly.

(A) It would leave behind a contribution to the individual experience of the pathologists of the region. It would leave no on-going relationship between institutions unless programs are effected as described in 8. (B). Equipment left over is largely office equipment of one secretary.

(B) Technical and secretarial services either in a central place such as a medical school or rotated among individual hospitals as described in 8. (B).

10. Discuss any improtant aspects of your project not asked about.

Excerpts from a letter to F.M. Simmons Patterson, M.D.

We have encountered difficulties in continuing the Tumor Tissue Registry at the Moses Cone Hospital and I am proposing that the project be transferred to the UNC School of Medicine at Chapel Hill after July 1, 1971, providing of course that the Registry is funded.

....The first and most acute circumstance was the resignation of our chief histologist, James Harris. This has left us with a serious shortage of technical help......

A second reason has been my own situation. There has been a steadily increasing volume of work in dermal pathology and it is becoming increasingly more difficult to keep up with the routine work. I do not feel that I am doing justice to the Registry.

I have corresponded with the consulting panel of the Tumor Tissue Registry and suggested that the Registry be transferred to a teaching center... If the project is closed out at Moses Cone Hospital they (Dr. Benson and Dr. Brinkhous) would like to have it transferred to the University of North Carolina at Chapel Hill. The University of North Carolina has fostered extra-mural teaching programs and the material would be splendid for their residency training program

11. Has your present system of data collection allowed you to answer these questions relatively easily? If not, how do you plan to change your system of data collection in the future so that your activities will be more effectively documented?

Very easily.

# APPENDIX II

TABLE A1: NORTH CAROLINA COUNTIES BY URBAN-RURAL TYPE,[1] 1970 POPULATION,[2] AND SERVICE AREA.[3]

| County | Population 1970 | Service Area |
|---|---|---|
| METROPOLITAN | | |
| Buncombe | 145,056 | 1 |
| Durham | 132,681 | 4 |
| Forsyth | 214,348 | 2 |
| Guilford | 288,590 | 2 |
| Mecklenburg | 354,656 | 3 |
| Wake | 228,453 | 4 |
| URBAN | | |
| Alamance | 96,362 | 4 |
| Cabarrus | 74,629 | 3 |
| Catawba | 90,873 | 3 |
| Cumberland | 212,042 | 5 |
| Davidson | 95,627 | 2 |
| Edgecombe | 52,341 | 6 |
| Gaston | 148,415 | 3 |
| Iredell | 72,197 | 3 |
| Lee | 30,467 | 5 |
| Lenoir | 55,204 | 6 |
| New Hanover | 82,996 | 5 |
| Pasquotank | 26,824 | 6 |
| Pitt | 73,900 | 6 |
| Rockingham | 72,402 | 2 |
| Rowan | 90,035 | 3 |
| Wayne | 85,408 | 5 |
| Wilson | 57,486 | 6 |
| ADJACENT | | |
| Chatham | 29,554 | 4 |
| Davie | 18,855 | 2 |
| Franklin | 26,820 | 4 |
| Granville | 32,762 | 4 |
| Haywood | 41,710 | 1 |
| Henderson | 42,804 | 1 |
| Johnston | 61,737 | 4 |
| Lincoln | 32,682 | 3 |
| McDowell | 30,648 | 1 |
| Madison | 16,003 | 1 |
| Orange | 57,707 | 4 |
| Person | 25,914 | 4 |
| Randloph | 76,358 | 2 |
| Stokes | 23,782 | 2 |
| Surry | 51,415 | 2 |
| Union | 54,714 | 3 |
| Yadkin | 24,599 | 2 |
| Yancey | 12,629 | 1 |

TABLE A1: NORTH CAROLINA COUNTIES BY URBAN-RURAL TYPE,[1] 1970 POPULATION,[2] AND SERVICE AREA.[3] (CONTINUED)

| County | Population 1970 | Service Area |
|---|---|---|
| SEMI-RURAL | | |
| Anson | 23,488 | 3 |
| Beaufort | 35,980 | 6 |
| Burke | 60,364 | 3 |
| Caldwell | 56,699 | 3 |
| Carteret | 31,603 | 6 |
| Chowan | 10,764 | 6 |
| Cleveland | 72,556 | 3 |
| Columbus | 46,937 | 5 |
| Craven | 62,554 | 6 |
| Halifax | 53,884 | 6 |
| Harnett | 49,667 | 5 |
| Hertford | 23,529 | 6 |
| Hoke | 16,436 | 5 |
| Martin | 24,730 | 6 |
| Mitchell | 13,447 | 1 |
| Moore | 39,048 | 5 |
| Nash | 59,122 | 6 |
| Onslow | 103,126 | 5 |
| Richmond | 39,889 | 3 |
| Robeson | 84,842 | 5 |
| Rutherford | 47,337 | 3 |
| Sampson | 44,954 | 5 |
| Scotland | 26,929 | 5 |
| Stanly | 42,822 | 3 |
| Transylvannia | 19,713 | 1 |
| Vance | 32,691 | 4 |
| Washington | 14,038 | 6 |
| Watauga | 23,404 | 1 |
| Wilkes | 49,524 | 2 |
| RURAL | | |
| Alexander | 19,466 | 3 |
| Alleghany | 8,134 | 2 |
| Ashe | 19,571 | 2 |
| Avery | 12,655 | 1 |
| Bertie | 20,528 | 6 |
| Bladen | 26,477 | 5 |
| Brunswick | 24,223 | 5 |
| Camden | 5,453 | 6 |
| Caswell | 19,055 | 4 |
| Cherokee | 16,330 | 1 |
| Clay | 5,180 | 1 |
| Currituck | 6,976 | 6 |
| Dare | 6,995 | 6 |
| Duplin | 38,015 | 5 |

TABLE A1: NORTH CAROLINA COUNTIES BY URBAN-RURAL TYPE,[1] 1970 POPULATION,[2] AND SERVICE AREA.[3] (CONTINUED)

| County | Population 1970 | Service Area |
|---|---|---|
| **RURAL CONTINUED** | | |
| Gates | 8,524 | 6 |
| Graham | 6,562 | 1 |
| Greene | 14,967 | 6 |
| Hyde | 5,571 | 6 |
| Jackson | 21,593 | 1 |
| Jones | 9,779 | 6 |
| Macon | 15,788 | 1 |
| Montgomery | 19,267 | 5 |
| Northampton | 24,009 | 6 |
| Pamlico | 9,467 | 6 |
| Pender | 18,149 | 5 |
| Perquimans | 8,351 | 6 |
| Polk | 11,735 | 1 |
| Swain | 7,861 | 1 |
| Tyrrell | 3,806 | 6 |
| Warren | 15,810 | 4 |
| STATE | 5,082,059 | |

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[1] Urban-Rural Type: All categorizations are based on 1960 census figures. Metropolitan counties are those lesser metropolitan areas used by the Public Health Service. Urban counties are those counties above the 1960 census state mean of percent urban, which were not metropolitan. Adjacent counties are semi-rural and rural counties which appear to be dependent for medical service on adjoining metropolitan counties. This is a slight modification of the Public Health Service categorization. Semi-rural counties are those with at least one town of 2,500 or more population, that are neither adjacent, urban or metropolitan. Rural counties are isolated rural counties with no town with a population of 2,500 and not dependent on an adjacent metropolitan county.

[2] 1970 Census Population for North Carolina.

[3] Service Areas were pragmatically derived from a matrix of general hospital deaths from major chronic causes (cardiovascular-renal, neoplasms, diabetes) by residence X place of occurence--for decedents. Data were provided by the State Board of Health. Considering only net movements of 10+ percent of a county's resident decedents to specific other counties' hospitals, it was possible to delineate boundaries across which a minimum of crossovers was actually made. The result was six well-differentiated areas of relatively complete autonomy in the State--hereafter referred to as Hospital Service Areas. A comparable data matrix of residence and occurrence of births was quite consistent, as were mortality matrices for years extending from 1956-1969.

TABLE A2: DISTRIBUTION OF NORTH CAROLINA COUNTIES ON AN URBAN-RURAL CONTINUUM, BY SERVICE AREA

| Service Area | Number of Counties | Rural | Semi-Rural | Adjacent | Urban | Metropolitan |
|---|---|---|---|---|---|---|
| I | 17 | 8 | 3 | 5 | 0 | 1 |
| II | 12 | 2 | 1 | 5 | 2 | 2 |
| III | 16 | 1 | 7 | 2 | 5 | 1 |
| IV | 12 | 2 | 1 | 6 | 1 | 2 |
| V | 17 | 5 | 8 | 0 | 4 | 0 |
| VI | 26 | 12 | 9 | 0 | 5 | 0 |

TABLE A3: PERCENTAGE DISTRIBUTION OF NORTH CAROLINA COUNTIES ON AN URBAN RURAL CONTINUUM, BY SERVICE AREA

| Service Area | Rural | Semi-Rural | Adjacent | Urban | Metropolitan | Total |
|---|---|---|---|---|---|---|
| I | 47 | 18 | 29 | 0 | 6 | 100<br>(N=17) |
| II | 17 | 8 | 42 | 17 | 17 | 101<br>(N=12) |
| III | 6 | 44 | 12 | 32 | 6 | 100<br>(N=16) |
| IV | 17 | 8 | 50 | 8 | 17 | 100<br>(N-12) |
| V | 29 | 47 | 0 | 24 | 0 | 100<br>(N=17) |
| VI | 46 | 35 | 0 | 19 | 0 | 100<br>(N=26) |

TABLE A4 : NUMBER OF ACTIVE PHYSICIANS[1], NUMBER OF GENERAL PRACTITIONERS[1], PERCENT OF GENERAL PRACTITIONERS IN NORTH CAROLINA COUNTIES, GROUPED IN CATEGORIES ON AN URBAN-RURAL CONTINUUM.

| County | Number of Active Physicians | Number of G. P.'s | Percent G. P.'s |
|---|---|---|---|
| METROPOLITAN | | | |
| Bumcombe | 196 | 31 | 15.8 |
| Durham | 680 | 15 | 2.2 |
| Forsyth | 426 | 42 | 9.9 |
| Guilford | 298 | 46 | 15.4 |
| Mecklenburg | 416 | 50 | 12.0 |
| Wake | 278 | 42 | 15.1 |
| Total | 2,294 | 226 | 11.7 |
| Average | 382.3 | 37.7 | |
| URBAN | | | |
| Alamance | 81 | 27 | 33.3 |
| Cabarrus | 58 | 14 | 24.1 |
| Catawba | 76 | 35 | 46.0 |
| Cumberland | 80 | 12 | 15.0 |
| Davidson | 40 | 14 | 35.0 |
| Edgecombe | 17 | 8 | 47.0 |
| Gaston | 81 | 33 | 40.7 |
| Iredell | 36 | 2 | 5.6 |
| Lee | 23 | 10 | 43.5 |
| Lenoir | 45 | 11 | 24.4 |
| New Hanover | 95 | 12 | 12.6 |
| Pasquotank | 24 | 9 | 37.5 |
| Pitt | 71 | 22 | 31.0 |
| Rockingham | 40 | 21 | 52.5 |
| Rowan | 65 | 19 | 29.2 |
| Wayne | 55 | 21 | 38.2 |
| Wilson | 58 | 14 | 24.1 |
| Total | 945 | 284 | 30.1 |
| Average | 55.6 | 16.4 | |
| ADJACENT | | | |
| Chatham | 12 | 6 | 50.0 |
| Davie | 9 | 6 | 66.7 |
| Franklin | 11 | 8 | 72.7 |
| Granville | 45 | 12 | 26.7 |
| Haywood | 30 | 19 | 63.3 |
| Henderson | 41 | 19 | 46.3 |
| Johnston | 27 | 15 | 55.6 |
| Lincoln | 12 | 7 | 58.3 |
| McDowell | 12 | 10 | 83.3 |
| Madison | 8 | 8 | 100.0 |
| Orange | 395 | 21 | 5.3 |
| Person | 8 | 5 | 62.5 |
| Randolph | 33 | 18 | 54.5 |

TABLE A4: NUMBER OF ACTIVE PHYSICIANS[1], NUMBER OF GENERAL PRACTITIONERS[1], PERCENT OF GENERAL PRACTITIONERS IN NORTH CAROLINA COUNTIES, GROUPED IN CATEGORIES ON AN URBAN-RURAL CONTINUUM. (CONTINUED)

| County | Number of Active Physicians | Number of G. P.'s | Percent G. P.'s |
|---|---|---|---|
| ADJACENT CONTINUED | | | |
| Stokes | 5 | 3 | 60.0 |
| Surry | 31 | 21 | 67.7 |
| Union | 20 | 11 | 55.0 |
| Yadkin | 4 | 2 | 50.0 |
| Yancey | 4 | 4 | 100.0 |
| Total | 707 | 195 | 27.6 |
| Average | 39.3 | 10.8 | |
| SEMI-RURAL | | | |
| Anson | 6 | 3 | 50.0 |
| Beaufort | 24 | 6 | 25.0 |
| Burke | 57 | 20 | 35.1 |
| Caldwell | 34 | 17 | 50.0 |
| Carteret | 21 | 10 | 47.6 |
| Chowan | 7 | 4 | 57.1 |
| Cleveland | 58 | 25 | 43.1 |
| Columbus | 20 | 13 | 65.0 |
| Craven | 39 | 11 | 28.2 |
| Halifax | 23 | 13 | 56.5 |
| Harnett | 21 | 16 | 76.2 |
| Hertford | 14 | 7 | 50.0 |
| Hoke | 8 | 2 | 25.0 |
| Martin | 10 | 8 | 80.0 |
| Mitchell | 7 | 4 | 57.1 |
| Moore | 47 | 12 | 25.5 |
| Nash | 49 | 12 | 24.5 |
| Onslow | 22 | 11 | 50.0 |
| Richmond | 16 | 9 | 56.2 |
| Robeson | 48 | 15 | 31.2 |
| Rutherford | 26 | 11 | 42.3 |
| Sampson | 20 | 13 | 65.0 |
| Scotland | 23 | 9 | 39.1 |
| Stanly | 26 | 13 | 50.0 |
| Transylvannia | 14 | 7 | 50.0 |
| Vance | 14 | 7 | 50.0 |
| Washington | 4 | 3 | 75.0 |
| Watauga | 14 | 5 | 35.7 |
| Wilkes | 15 | 7 | 46.7 |
| Total | 687 | 293 | 42.6 |
| Average | 23.7 | 10.1 | |

TABLE A4 : NUMBER OF ACTIVE PHYSICIANS[1], NUMBER OF GENERAL PRACTITIONERS[1], PERCENT OF GENERAL PRACTITIONERS IN NORTH CAROLINA COUNTIES, GROUPED IN CATEGORIES ON AN URBAN-RURAL CONTINUUM. (CONTINUED)

| County | Number of Active Physicians | Number of G. P.'s | Percent G. P.'s |
|---|---|---|---|
| RURAL | | | |
| Alexander | 4 | 2 | 50.0 |
| Alleghany | 4 | 3 | 75.0 |
| Ashe | 7 | 4 | 57.1 |
| Avery | 9 | 5 | 55.6 |
| Bertie | 5 | 3 | 60.0 |
| Bladen | 8 | 6 | 75.0 |
| Brunswick | 7 | 4 | 57.1 |
| Camden | 1 | 1 | 100.0 |
| Caswell | 1 | 1 | 100.0 |
| Cherokee | 8 | 4 | 50.0 |
| Clay | 1 | 1 | 100.0 |
| Currituck | 2 | 2 | 100.0 |
| Dare | 2 | 2 | 100.0 |
| Duplin | 16 | 12 | 75.0 |
| Gates | 2 | 2 | 100.0 |
| Graham | 3 | 3 | 100.0 |
| Greene | 2 | 2 | 100.0 |
| Hyde | 1 | 1 | 100.0 |
| Jackson | 13 | 5 | 38.5 |
| Jones | 1 | 1 | 100.0 |
| Macon | 6 | 4 | 66.7 |
| Montgomery | 8 | 7 | 87.5 |
| Northampton | 7 | 7 | 100.0 |
| Pamlico | 1 | 1 | 100.0 |
| Pender | 4 | 4 | 100.0 |
| Perquimans | 0 | -- | -- |
| Polk | 17 | 6 | 35.3 |
| Swain | 3 | 2 | 66.7 |
| Tyrrell | 1 | 1 | 100.0 |
| Warren | 4 | 2 | 50.0 |
| Total | 148 | 98 | 66.2 |
| Average | 4.9 | 3.3 | |
| STATE | 4,781 | 1,096 | 22.9 |
| Average | 47.8 | 11.0 | |

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[1] January 1, 1970, including residents.

TABLE A5 : NUMBER OF GENERAL HOSPITALS AND NUMBER OF GENERAL HOSPITAL BEDS IN NORTH CAROLINA COUNTIES , GROUPED IN CATEGORIES ON AN URBAN-RURAL CONTINUUM.

| County | Number of General Hospitals | Number of General Hospital Beds |
|---|---|---|
| METROPOLITAN | | |
| Buncombe | 3 | 600 |
| Durham | 3 | 1094 |
| Forsyth | 4 | 1171 |
| Guilford | 4 | 1050 |
| Mecklenburg | 4 | 1545 |
| Wake | 8 | 965 |
| Total | 25 | 6425 |
| Average | 4.16 | 257.00 |
| URBAN | | |
| Alamance | 2 | 247 |
| Cabarrus | 1 | 329 |
| Catawba | 3 | 400 |
| Cumberland | 2 | 517 |
| Davidson | 2 | 185 |
| Edgecombe | 2 | 116 |
| Gaston | 2 | 265 |
| Iredell | 3 | 385 |
| Lee | 1 | 134 |
| Lenoir | 2 | 173 |
| New Hanover | 2 | 370 |
| Pasquotank | 1 | 152 |
| Pitt | 1 | 194 |
| Rockingham | 2 | 206 |
| Rowan | 1 | 348 |
| Wayne | 2 | 454 |
| Wilson | 1 | 251 |
| Total | 30 | 4726 |
| Average | 1.76 | 157.53 |
| ADJACENT | | |
| Chatham | 2 | 71 |
| Davie | 1 | 58 |
| Franklin | 1 | 80 |
| Granville | 2 | 188 |
| Haywood | 1 | 143 |
| Henderson | 3 | 257 |
| Johnston | 1 | 162 |
| Lincoln | 2 | 135 |
| McDowell | 1 | 54 |
| Madison | 0 | 0 |
| Orange | 1 | 370 |
| Person | 1 | 68 |
| Randolph | 1 | 165 |
| Stokes | 1 | 30 |

TABLE A5: NUMBER OF GENERAL HOSPITALS AND NUMBER OF GENERAL HOSPITAL BEDS IN NORTH CAROLINA COUNTIES, GROUPED IN CATEGORIES ON AN URBAN-RURAL CONTINUUM. (CONTINUED)

| County | Number of General Hospitals | Number of General Hospital Beds |
|---|---|---|
| ADJACENT CONTINUED | | |
| Surry | 2 | 160 |
| Union | 1 | 127 |
| Yadkin | 1 | 70 |
| Yancey | 1 | 33 |
| Total | 23 | 2171 |
| Average | 1.28 | 94.39 |
| SEMI-RURAL | | |
| Anson | 1 | 40 |
| Beaufort | 2 | 221 |
| Burke | 3 | 294 |
| Caldwell | 3 | 222 |
| Carteret | 2 | 188 |
| Chowan | 1 | 35 |
| Cleveland | 3 | 387 |
| Columbus | 1 | 141 |
| Craven | 1 | 161 |
| Halifax | 2 | 144 |
| Harnett | 2 | 162 |
| Hertford | 1 | 109 |
| Hoke | 0 | |
| Martin | 2 | 60 |
| Mitchell | 1 | 50 |
| Moore | 2 | 280 |
| Nash | 2 | 186 |
| Onslow | 1 | 71 |
| Richmond | 2 | 190 |
| Robeson | 2 | 238 |
| Rutherford | 1 | 106 |
| Sampson | 1 | 178 |
| Scotland | 1 | 165 |
| Stanly | 1 | 134 |
| Transylvannia | 1 | 39 |
| Vance | 1 | 100 |
| Washington | 1 | 36 |
| Watauga | 2 | 119 |
| Wilkes | 1 | 100 |
| Total | 44 | 4156 |
| Average | 1.52 | 94.45 |
| RURAL | | |
| Alexander | 1 | 31 |
| Alleghany | 1 | 46 |
| Ashe | 1 | 50 |
| Avery | 1 | 134 |
| Bertie | 1 | 50 |
| Bladen | 1 | 60 |
| Brunswick | 1 | 48 |

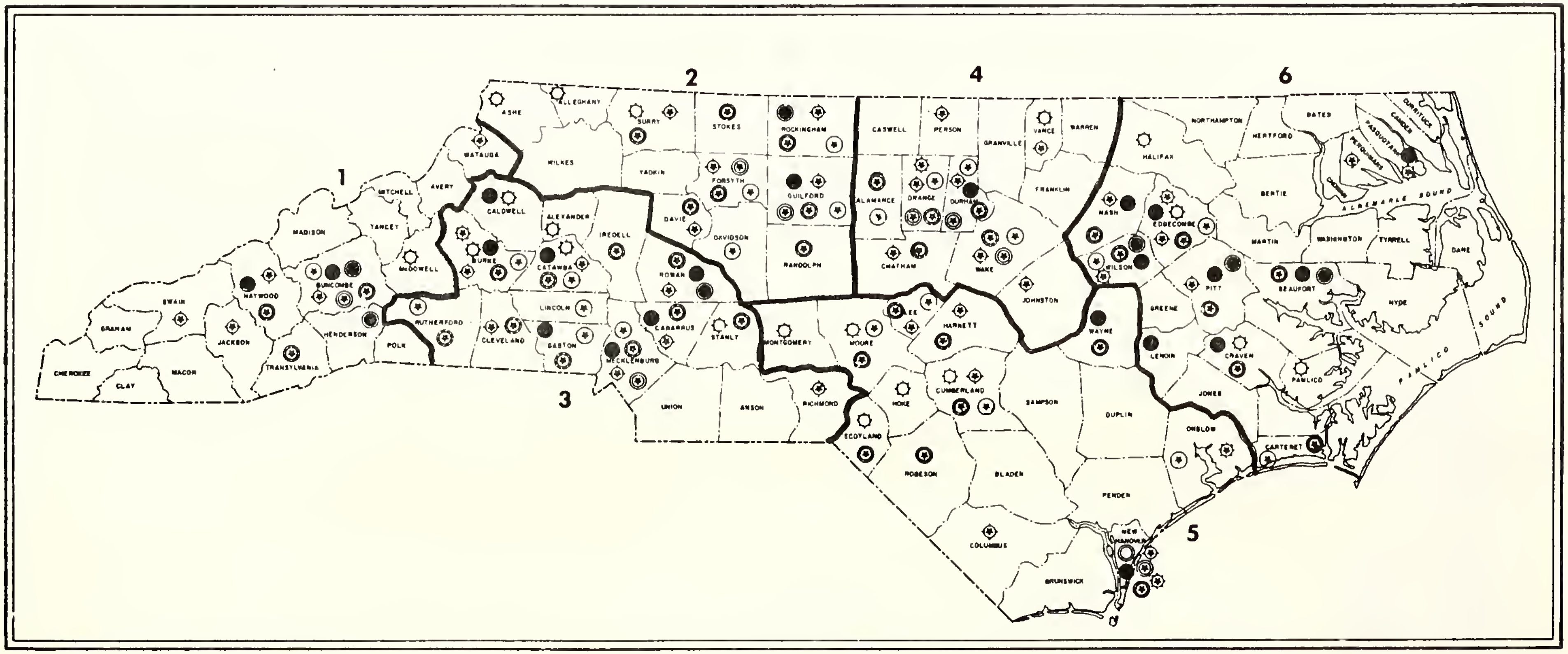
TABLE A5: NUMBER OF GENERAL HOSPITALS AND NUMBER OF GENERAL HOSPITAL BEDS IN NORTH CAROLINA COUNTIES, GROUPED IN CATEGORIES ON AN URBAN-RURAL CONTINUUM. (CONTINUED)

| County | Number of General Hospitals | Number of General Hospital Beds |
|---|---|---|
| RURAL CONTINUED | | |
| Camden | 0 | 0 |
| Caswell | 0 | 0 |
| Cherokee | 3 | 78 |
| Clay | 0 | 0 |
| Currituck | 0 | 0 |
| Dare | 0 | 0 |
| Duplin | 1 | 56 |
| Gates | 0 | 0 |
| Graham | 0 | 0 |
| Greene | 0 | 0 |
| Hyde | 0 | 0 |
| Jackson | 1 | 50 |
| Jones | 0 | 0 |
| Macon | 2 | 63 |
| Montgomery | 1 | 50 |
| Northampton | 0 | 0 |
| Pamlico | 0 | 0 |
| Pender | 1 | 47 |
| Perquimans | 0 | 0 |
| Polk | 1 | 50 |
| Swain | 1 | 51 |
| Tyrrell | 1 | 33 |
| Warren | 1 | 37 |
| Total | 20 | 934 |
| Average | .67 | 46.7 |

Table A6: Registered Nurses Licensed and Reporting Residence in North Carolina, 1969-1971.

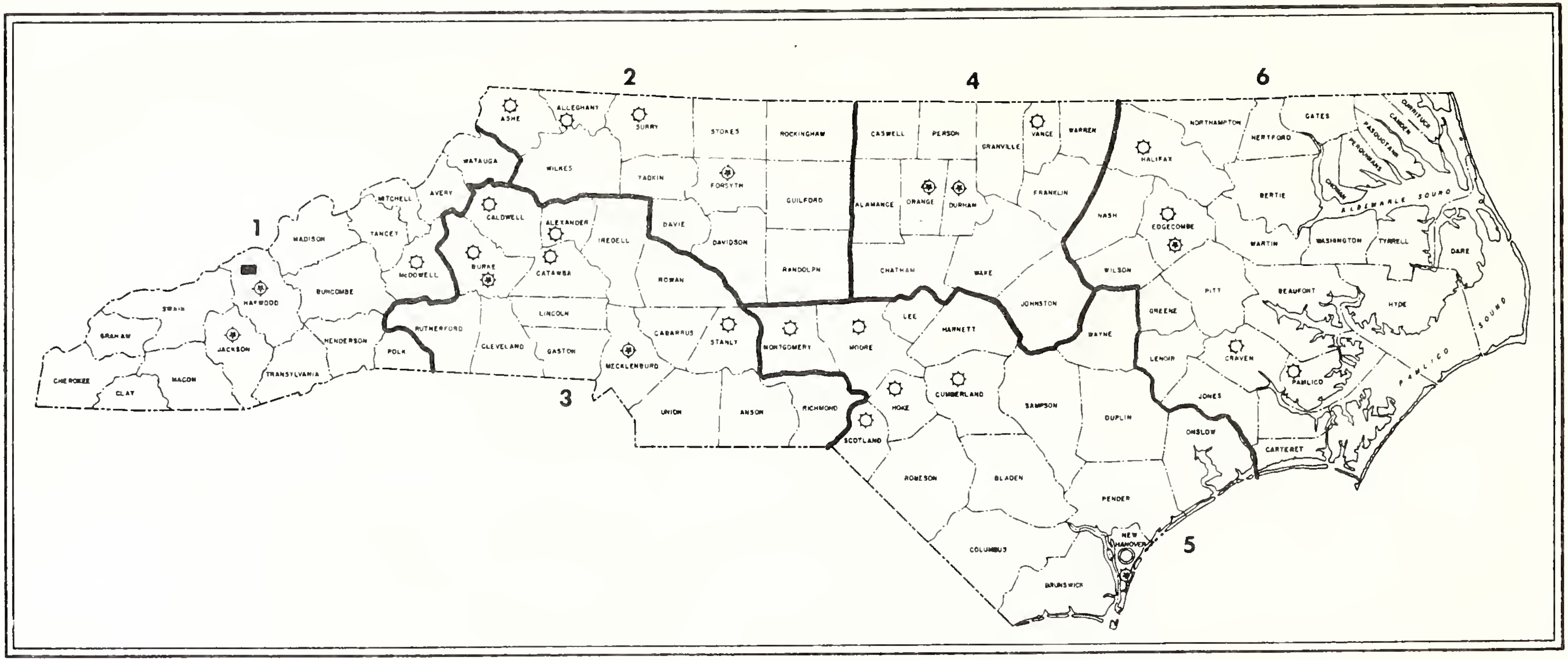
| Field of Practice | Number |
|---|---|
| Hospital | 9,257 |
| Nursing Home | 387 |
| School of Nursing | 497 |
| Private Duty | 1,060 |
| Public Health | 882 |
| School Nurse | 328 |
| Industrial | 329 |
| Office | 1,279 |
| PNE Program | 80 |
| Other Specified Field | 386 |
| Total Practicing | 14,485 |
| Not Practicing | 2,985 |
| GRAND TOTAL | 17,470 |

MAP 1: DISTRIBUTION OF REGIONAL MEDICAL PROGRAM EDUCATIONAL ACTIVITIES IN NORTH CAROLINA COUNTIES



● = Hypertension
☼ = Stroke
◎ = Cancer Information Services
⊛ = Tumor Tissue Registry
✲ = Education and Research in Community Medicine
⊙ = Innovations in Clinic Nursing
◉ = Continuation Education in Dentistry
⦾ = Continuation Education for Physical Therapists
◈ = Diabetes Consultation and Education Services

MAP 2: DISTRIBUTION OF REGIONAL MEDICAL PROGRAM SERVICE ACTIVITIES IN NORTH CAROLINA COUNTIES

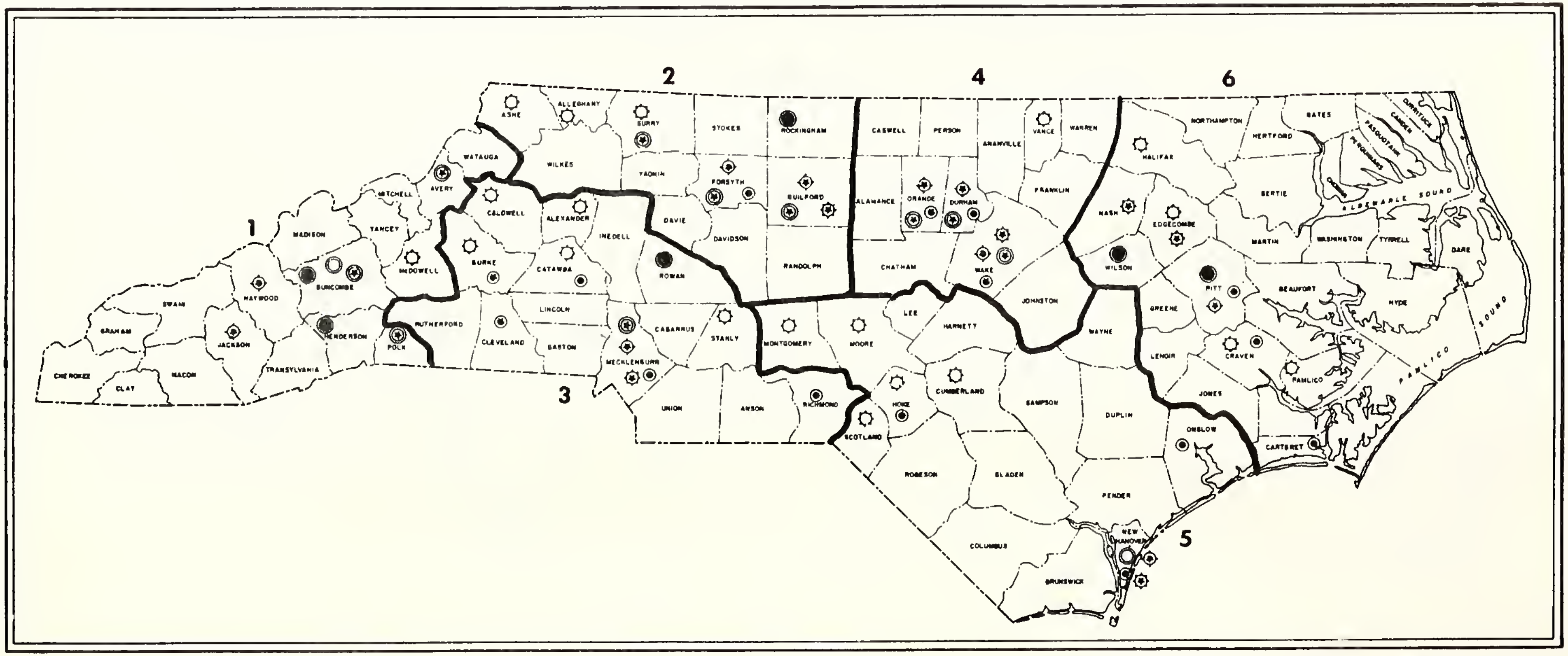


Gestational Trophoblastic Neoplasia Project treated patients from all over North Carolina.

Community Program for the Early Detection and Management of Hypertension, project response doesn't specify where patients are from.

Patient Service:
◎ = Cancer Information Service
○ = Comprehensive Stroke Program
⊕ = Diabetes Consultation and Education Service
✱ = Education and Research in Community Medicine
■ = Mobile Cardiac Intensive Care

MAP 3: DISTRIBUTION OF REGIONAL MEDICAL PROGRAM FORMAL RELATIONSHIPS IN NORTH CAROLINA COUNTIES



Formal Relationships·
⊙ = Central Cancer Registry
◎ = Cancer Information Service
✦ = Diabetes Consultation and Education Service
✪ = Education and Research in Community Medicine
● = Continuation Education in Dentistry
◉ = Continuation Education for Physical Therapists
☼ = Comprehensive Stroke Program

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